

**ORDER NO. MKE0202102C1**

**B3, B6**

# **Service Manual**

**Combination VCR**

**PVQ-1312W / PVQ-2012 / VV-2002 / PVQ-2512 / PV-C2542 / PV  
-C1322-K / PV-C1352W-K / PV-C2022-K**



## **SPECIFICATIONS**



ITEM	SPECIFICATION	1	2	3	4	5	6	7	ITEM	SPECIFICATION	1	2	3	4	5	6	7			
Video	Head: 2 rotary heads helical scanning system	○	○	○	○	○	○	○	VCR	Tape Speed	SP: 1-5/16 i.p.s (33.35 mm/s), LP: 21/32 i.p.s (16.67 mm/s), SLP: 7/16 i.p.s (11.12 mm/s)	○	○	○	○	○	○	○		
	4 rotary heads helical scanning system	○	○	○	○	○	○	○			Record/Playback Time: 8 hr. with 160 min. type tape used in SLP mode	○	○	○	○	○	○	○	○	
	Input Level: VIDEO IN Jack (Phono type) 1.0 Vp-p 75 Ω unbalanced	○	○	○	○	○	○	○			FF/REW Time: Less than 2-1/2 min. (120 min. type tape)	○	○	○	○	○	○	○	○	
	Output Level: VIDEO OUT Jack (Phono type) 1.0 Vp-p 75 Ω unbalanced	○	○	○	○	○	○	○			*Note: FF/REW Time may be exceed specification according to tape condition.	○	○	○	○	○	○	○	○	
Audio	Signal-to-Noise Ratio: SP: more than 43 dB	○	○	○	○	○	○	○	FM Radio	Tape Format	Tape width 12.7 mm (1/2 inch) high density tape	○	○	○	○	○	○	○		
	LP/SLP: more than 41 dB	○	○	○	○	○	○	○			Band Range	87.5 MHz-108.1 MHz	-	○	○	○	○	○	○	
	Horizontal Resolution: Color/Monochrome: more: SP: 230 lines	○	○	○	○	○	○	○				DISPLAY	Picture Tube	13 inch measured diagonal 90° deflection Picture Tube	○	○	○	○	○	○
	LP/SLP: 220 lines	○	○	○	○	○	○	○						20 inch measured diagonal 90° deflection Picture Tube	-	-	-	○	○	○
VCR	Head: Normal Mono: 1 stationary head	○	○	○	○	○	○	○	Power	Source: 120 V AC±12 V AC, 60 Hz±3 Hz				25 inch measured diagonal 110° deflection Picture Tube	○	○	○	○	○	○
	Input Level: AUDIO IN Jack (Phono type) -10 dBv 50 kΩ unbalanced	○	○	○	○	○	○	○			Television System			EIA Standard (525 lines, 60 fields) NTSC Color Signal	○	○	○	○	○	○
	Frequency Response: Normal Mono: SP: 100 Hz-8 kHz	○	○	○	○	○	○	○				Operating Condition	5 °C-40 °C (41 °F-104 °F) (Temperature)		○	○	○	○	○	○
	LP: 100 Hz-8 kHz	○	○	○	○	○	○	○							10 %-75 % (Humidity)	○	○	○	○	○
SLP: 100 Hz-5 kHz	○	○	○	○	○	○	○	Dimension (W x H x D)	366 mm x 385 mm x 374 mm (15-3/16 inch x 15-3/16 inch x 14-3/4 inch)	○					○	○	○	○	○	
Signal-to-Noise Ratio: Normal Mono: SP: more than 42 dB	○	○	○	○	○	○	○			515 mm x 505 mm x 474 mm (20-5/16 inch x 19-7/8 inch x 18-11/16 inch)	-			-	-	○	○	○	○	
LP/SLP: more than 40 dB	○	○	○	○	○	○	○			634 mm x 590 mm x 464 mm (24-1/5 inch x 23-1/4 inch x 18-1/4 inch)	○	○	○	○	○	○	○			
Tuner	Wow and Flutter: Normal Mono: SP: Less than 0.2 % WRMS	○	○	○	○	○	○			○	3K5EFA	Weight	12 kg (26.4 lbs.)	○	○	○	○	○	○	○
	LP: Less than 0.3 % WRMS	○	○	○	○	○	○	○	23 kg (50.6 lbs.)	-			-	-	○	○	○	○		
	SLP: Less than 0.4 % WRMS	○	○	○	○	○	○	○	31 kg (68.2 lbs.)	-			-	-	○	○	○	○		
	Broadcast Channels: VHF 2-13, UHF 14-69	○	○	○	○	○	○	○	Tuner	CABLE Channels: Midband A through I (14-22)			○	○	○	○	○	○	○	
Superband J through W (23-36)	○	○	○	○	○	○	○	Operating Condition			5 °C-40 °C (41 °F-104 °F) (Temperature)	○	○	○	○	○	○			
Hyperband AA-EEE (37-64)	○	○	○	○	○	○	○					10 %-75 % (Humidity)	○	○	○	○	○	○		
Lowband A-5-A-1 (95-99)	○	○	○	○	○	○	○					Dimension (W x H x D)	366 mm x 385 mm x 374 mm (15-3/16 inch x 15-3/16 inch x 14-3/4 inch)	○	○	○	○	○	○	
Special CABLE channel 5A (01)	○	○	○	○	○	○	○		515 mm x 505 mm x 474 mm (20-5/16 inch x 19-7/8 inch x 18-11/16 inch)	-				-	-	○	○	○	○	
Ultraband 65-94, 100-125	○	○	○	○	○	○	○	634 mm x 590 mm x 464 mm (24-1/5 inch x 23-1/4 inch x 18-1/4 inch)	○	○	○			○	○	○	○			
Tuner	CABLE Channels: Midband A through I (14-22)	○	○	○	○	○	○	○	3K5EFA	Weight	12 kg (26.4 lbs.)			○	○	○	○	○	○	○
	Superband J through W (23-36)	○	○	○	○	○	○	○			23 kg (50.6 lbs.)	-	-	-	○	○	○	○		
	Hyperband AA-EEE (37-64)	○	○	○	○	○	○	○			31 kg (68.2 lbs.)	-	-	-	○	○	○	○		
	Lowband A-5-A-1 (95-99)	○	○	○	○	○	○	○			Dimension (W x H x D)	366 mm x 385 mm x 374 mm (15-3/16 inch x 15-3/16 inch x 14-3/4 inch)	○	○	○	○	○	○		
Special CABLE channel 5A (01)	○	○	○	○	○	○	○	515 mm x 505 mm x 474 mm (20-5/16 inch x 19-7/8 inch x 18-11/16 inch)	-	-			-	○	○	○	○			
Ultraband 65-94, 100-125	○	○	○	○	○	○	○	634 mm x 590 mm x 464 mm (24-1/5 inch x 23-1/4 inch x 18-1/4 inch)	○	○			○	○	○	○	○			
Tuner	CABLE Channels: Midband A through I (14-22)	○	○	○	○	○	○	○	3K5EFA	Weight			12 kg (26.4 lbs.)	○	○	○	○	○	○	○
	Superband J through W (23-36)	○	○	○	○	○	○	○			23 kg (50.6 lbs.)	-	-	-	○	○	○	○		
	Hyperband AA-EEE (37-64)	○	○	○	○	○	○	○			31 kg (68.2 lbs.)	-	-	-	○	○	○	○		
	Lowband A-5-A-1 (95-99)	○	○	○	○	○	○	○			Dimension (W x H x D)	366 mm x 385 mm x 374 mm (15-3/16 inch x 15-3/16 inch x 14-3/4 inch)	○	○	○	○	○	○		
Special CABLE channel 5A (01)	○	○	○	○	○	○	○	515 mm x 505 mm x 474 mm (20-5/16 inch x 19-7/8 inch x 18-11/16 inch)	-	-			-	○	○	○	○			
Ultraband 65-94, 100-125	○	○	○	○	○	○	○	634 mm x 590 mm x 464 mm (24-1/5 inch x 23-1/4 inch x 18-1/4 inch)	○	○			○	○	○	○	○			
Tuner	CABLE Channels: Midband A through I (14-22)	○	○	○	○	○	○	○	3K5EFA	Weight			12 kg (26.4 lbs.)	○	○	○	○	○	○	○
	Superband J through W (23-36)	○	○	○	○	○	○	○			23 kg (50.6 lbs.)	-	-	-	○	○	○	○		
	Hyperband AA-EEE (37-64)	○	○	○	○	○	○	○			31 kg (68.2 lbs.)	-	-	-	○	○	○	○		
	Lowband A-5-A-1 (95-99)	○	○	○	○	○	○	○			Dimension (W x H x D)	366 mm x 385 mm x 374 mm (15-3/16 inch x 15-3/16 inch x 14-3/4 inch)	○	○	○	○	○	○		
Special CABLE channel 5A (01)	○	○	○	○	○	○	○	515 mm x 505 mm x 474 mm (20-5/16 inch x 19-7/8 inch x 18-11/16 inch)	-	-			-	○	○	○	○			
Ultraband 65-94, 100-125	○	○	○	○	○	○	○	634 mm x 590 mm x 464 mm (24-1/5 inch x 23-1/4 inch x 18-1/4 inch)	○	○			○	○	○	○	○			
Tuner	CABLE Channels: Midband A through I (14-22)	○	○	○	○	○	○	○	3K5EFA	Weight			12 kg (26.4 lbs.)	○	○	○	○	○	○	○
	Superband J through W (23-36)	○	○	○	○	○	○	○			23 kg (50.6 lbs.)	-	-	-	○	○	○	○		
	Hyperband AA-EEE (37-64)	○	○	○	○	○	○	○			31 kg (68.2 lbs.)	-	-	-	○	○	○	○		
	Lowband A-5-A-1 (95-99)	○	○	○	○	○	○	○			Dimension (W x H x D)	366 mm x 385 mm x 374 mm (15-3/16 inch x 15-3/16 inch x 14-3/4 inch)	○	○	○	○	○	○		
Special CABLE channel 5A (01)	○	○	○	○	○	○	○	515 mm x 505 mm x 474 mm (20-5/16 inch x 19-7/8 inch x 18-11/16 inch)	-	-			-	○	○	○	○			
Ultraband 65-94, 100-125	○	○	○	○	○	○	○	634 mm x 590 mm x 464 mm (24-1/5 inch x 23-1/4 inch x 18-1/4 inch)	○	○			○	○	○	○	○			

1. PVQ-1312W
2. PV-C1322-K
3. PV-C1352W-K
4. PVQ-2012/ VV-2002
5. PV-C2022-K
6. PVQ-2512
7. PV-C2542

Weight and dimensions shown are approximate.  
Designs and specifications are subject to change without notice.

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### ⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

**Panasonic®/Quasar®**

## 1. SAFETY PRECAUTIONS

### GENERAL GUIDELINES

#### 1. IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

2. An Isolation Transformer should always be used during the servicing of Combination VCR whose chassis is not isolated from



the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect Combination VCR from being damaged by accidental shorting that may occur during servicing.

3. When servicing, observe the original lead dress, especially the lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers, shield, and isolation R-C combinations are properly installed.
5. Before turning the receiver on, measure the resistance between B+ line and chassis ground. Connect (-) side of an ohmmeter to the B+ lines, and (+) side to chassis ground. Each line should have more resistance than specified, as follows :  
(For model with 13 inch CRT)

#### **B+ Line**

##### **Minimum Resistance**

**130.0 V**

**1 k  $\Omega$  (Cold chassis ground)**

**23.5 V**

**180  $\Omega$  (Cold chassis ground)**

**13.0 V**

**110  $\Omega$  (Cold chassis ground)**

**(For model with 20 inch CRT)**

#### **B+ Line**

##### **Minimum Resistance**

**130.0 V**

**1 k  $\Omega$  (Cold chassis ground)**

**21.5 V**

**180  $\Omega$  (Cold chassis ground)**

**15.9 V**



**110  $\Omega$  (Cold chassis ground)  
(For model with 25 inch CRT)**

**B+ Line**

**Minimum Resistance**

**125.0 V**

**1 k  $\Omega$  (Cold chassis ground)**

**27.0 V**

**180  $\Omega$  (Cold chassis ground)**

**17.0 V**

**110  $\Omega$  (Cold chassis ground)**

- 6. When the TV set is not used for a long period of time, unplug the power cord from the AC outlet.**
- 7. Potentials, as high as 25.0 kV (For model with 13 inch CRT) or 30.0 kV (For model with 20 inch CRT) or 32.0 kV (For model with 25 inch CRT) are present when this TV set is in operation. Operation of the TV set without the rear cover involves the danger of a shock hazard from the TV set power supply. Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the picture tube to the CRT ground of receiver before handling the tube.**
- 8. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.**

**LEAKAGE CURRENT COLD CHECK**

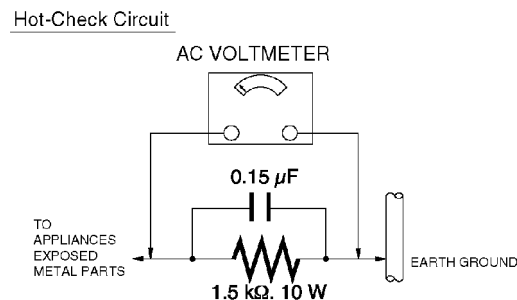
- 1. Unplug the AC cord and connect a jumper between the two prongs on the plug.**
- 2. For physically operated power switches, turn power on. Otherwise skip step 2.**
- 3. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screwheads, connectors, etc. When the exposed metallic part has a return path to the chassis, the readings should be between 1 M  $\Omega$  and 12 M  $\Omega$  . When the exposed metal does not have a return path to the chassis, the reading must be infinity.**



#### LEAKAGE CURRENT HOT CHECK

1. Plug the AC cord directly into the AC outlet.  
Do not use a isolation transformer for this check.
2. Connect a  $1.5\text{ k}\Omega$  ,  $10\text{ W}$  resistor, in parallel with a  $0.15\text{ }\mu\text{F}$  capacitor, between each exposed metallic part on the set and a good earth ground , as shown in Figure 1.
3. Use an AC voltmeter, with  $1\text{ k}\Omega/\text{V}$  or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed  $0.75\text{ V RMS}$ .  
A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks. Leakage current must not exceed  $1/2\text{ mA}$ . In case a measurement is outside of the limits specified, there is a possibility of shock hazard, and thereceiver should be repaired and rechecked before it is returned to the customer.

Figure 1



## 2. X-RADIATION

#### WARNING :

1. The potential source of X-Radiation in TV sets is the High Voltage section and the picture tube.
2. When using a picture tube test fixture for service, ensure that the fixture is capable of handling  $25.0\text{ kV}$  (For model with 13 inch CRT) or  $30.0\text{ kV}$  (For model with 20 inch CRT) or  $32.0\text{ kV}$  (For model with 25 inch CRT) without causing X-Radiation.



**NOTE :**

It is important to use an accurate periodically calibrated high voltage meter.

1. Reduce the brightness to minimum.
2. Set the SERVICE switch to SERVICE .
3. Measure the High Voltage. The meter reading should indicate 23.5 kV $\pm$ 1.5 kV (For model with 13 inch CRT) or 28.5 kV $\pm$ 1.5 kV (For model with 20 inch CRT) or 30.0 kV $\pm$ 2.0 kV (For model with 25 inch CRT).

If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.

4. To prevent an X-Radiation possibly, it is essential to use the specified picture tube.

**HORIZONTAL OSCILLATOR DISABLE CIRCUIT TEST**

**SERVICE WARNING :**

The test must be made as a final check before set is returned to the customer.

1. With the rear cover removed, supply about a 90 V AC power source to the set, turn on the set.
2. Set the customer controls to normal operating positions.
3. Short both sides of R804 on the Main circuit board with a jumper wire. Confirm that the picture goes out of horizontal sync.
4. If this does not occur, the horizontal oscillator disable circuit is not operating. Follow the Repair Procedures of horizontal oscillator disable circuit before the set is returned to customer.

**REPAIR PROCEDURES OF HORIZONTAL OSCILLATOR DISABLE CIRCUIT**

1. Connect a DC voltmeter between capacitor C513 (+) on the Main circuit board and chassis ground.
2. If approximately +21.0 V (For model with 13 inch CRT) or +21.9 V (For model with 20 inch CRT) or +23.5 V (For model with 25 inch CRT) is not present at that point when 120 V AC is applied, find the cause. Check R503, R5505, C5507, C513 and D503.
3. Carefully check above specified parts and related circuits and parts. When the circuit is repaired, try the horizontal oscillator



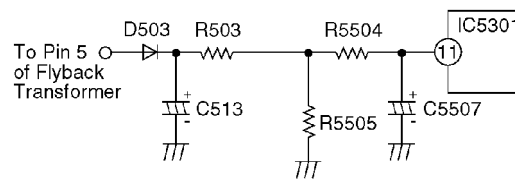
## **disable circuit test again.**

### **CIRCUIT EXPLANATION**

#### **HORIZONTAL OSCILLATOR DISABLE CIRCUIT**

The positive DC voltage, supplied from the D503 cathode for monitoring high voltage, is applied to the IC5301 Pin11 through R503 and R5504. Under normal conditions, the voltage at IC5301 Pin 11 is less than approx 3 V. If the high voltage at FlybackTr Pin 5 exceeds the specified voltage, the positive DC voltage which is supplied from the D503 cathode also increases. The increased voltage is applied to IC5301 Pin11 through R503 and R5504. Due to the increased voltage at IC5301 Pin11, the horizontal oscillator frequency increases, the picture goes out of horizontal sync, the beam current decreases and the picture becomes dark in order to keep X-radiation under specification.

**Figure 2**



## **3. PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES**

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors are semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

- 1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.**
- 2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.**
- 3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.**
- 4. Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate**



- electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
  6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
  7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
- CAUTION:**  
Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

"NOTE to CATV system installer :

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical."

## **4. OPERATION GUIDE**

## **5. SERVICE NOTES (PLEASE READ)**

### **5.1. SERVICE NOTES**

#### **5.1.1. SIMPLIFIED FAULT FINDING DATA**

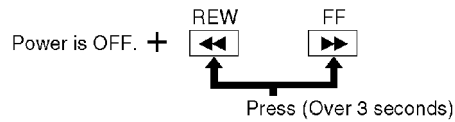
Simplified Self-Diagnostic System facilitates finding the cause of the fault. A 4 digit for fault code and communication for I2C bus code will be displayed on TV screen.

The Simplified Fault finding data is stored in the Memory IC (IC6004). This data is cleared after it is displayed, and then the POWER button is pressed back on.

1. With power turned off, press FF and REW buttons on unit together for over 3 seconds.

Fig. 1-1





2. TV power goes on and the unit goes into service mode. 4 digit for fault code and communication for I<sup>2</sup>C bus code will be displayed.

Fig. 1-2

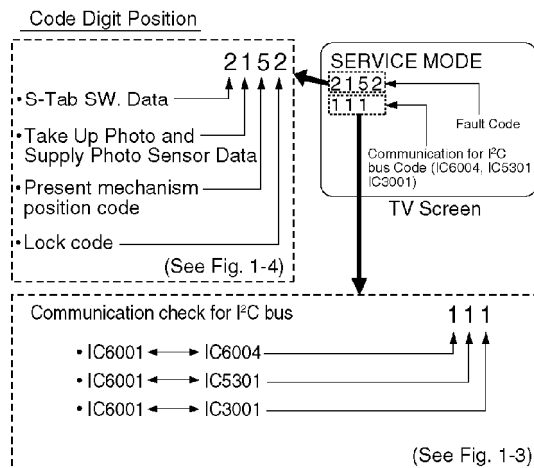


Fig. 1-3

(Communication check for I<sup>2</sup>C bus)

Explanation of Codes	Code No.			
Communication check for I <sup>2</sup> C bus (IC6001 ↔ IC6004) ----- NG	0			
OK	1			
Communication check for I <sup>2</sup> C bus (IC6001 ↔ IC5301) ----- NG	0			
OK	1			
Communication check for I <sup>2</sup> C bus (IC6001 ↔ IC3001) ----- NG			0	
OK			1	

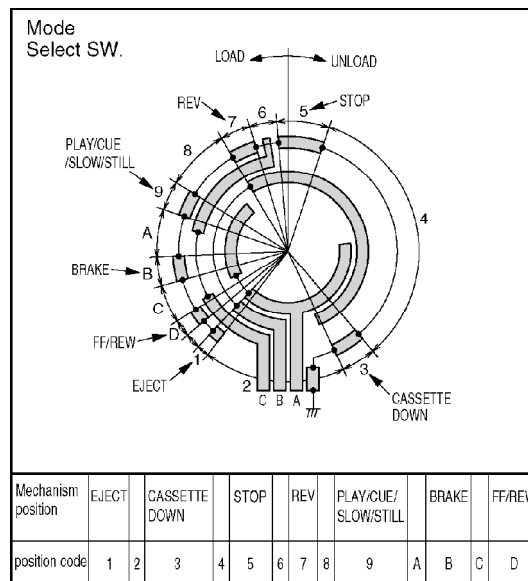
Fig. 1-4



**(Fault Code)**

Explanation of Codes	Code No.			
<b>S-Tab SW. Data</b> <ul style="list-style-type: none"> <li>S-Tab SW. is off.</li> <li>S-Tab SW. is on.</li> </ul>	1			
	2			
<b>Take Up and Supply Photo Sensor Data</b> <ul style="list-style-type: none"> <li>No light detected at either sensor.</li> <li>Take Up Photo Sensor detected at beginning of tape.</li> <li>Supply Photo Sensor detected at end of tape.</li> <li>Light detected at both sensors.</li> </ul>		1		
		2		
		3		
		4		
<b>Present Mechanism Position Code</b>  Mechanism Position is indicated. (Refer to Fig. 1-5.)			1	
			2	
			3	
			4	
			5	
			6	
			7	
			8	
			9	
			A	
			B	
			C	
			D	
<b>Lock Code (See Note)</b> <ul style="list-style-type: none"> <li>VCR is not in shut-off condition.</li> <li>Reel lock.</li> <li>Cylinder lock.</li> <li>Exceeds loading/unloading time. (Mechanism Lock)</li> <li>Exceeds Cassette loading/unloading time. (Cassette Lock)</li> <li>Tape Unloading (direction)</li> <li>Tape Loading (direction)</li> </ul>				0
				1
				2
				3
			1	4
			2	4

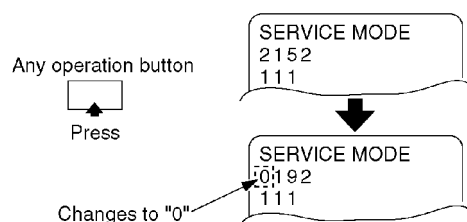
**Fig. 1-5**



- Press any operation button except for **POWER** on either the unit, or the remote to detect that a key has been pressed.  
The 1st digit changes to "0" only when key is detected.

**Fig. 1-6**





**Note:**

When 1 to 4 listed in Lock code occurs, the VCR stops and all VCR function buttons except for power become non-operational.

### 5.1.2. USAGE SCREEN MODE

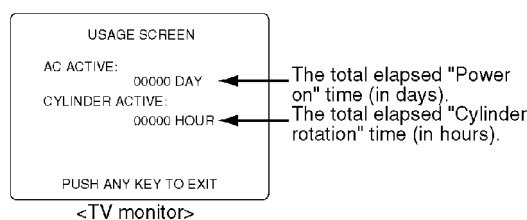
Function displayed on the TV monitor:

- the total elapsed "Power on" time (in days)
- the total elapsed "Cylinder rotation" time (in hours)

1. With power turned on and no cassette, press STOP/EJECT button on unit and 7 key on remote together.

The USAGE SCREEN will be displayed on the TV Monitor.

Fig. 1-7



**Note:**

1. After replacing the Cylinder Unit, press COUNTER RESET button on remote in this mode. Only Total elapsed "Cylinder rotation" time (in hours) will be cleared to 0.
2. To release from Usage Screen Mode, press any operation button on unit or insert a cassette tape in this mode. The unit will return to normal operation mode.

### 5.1.3. SERVICE POSITION

#### 5.1.3.1. Service Position

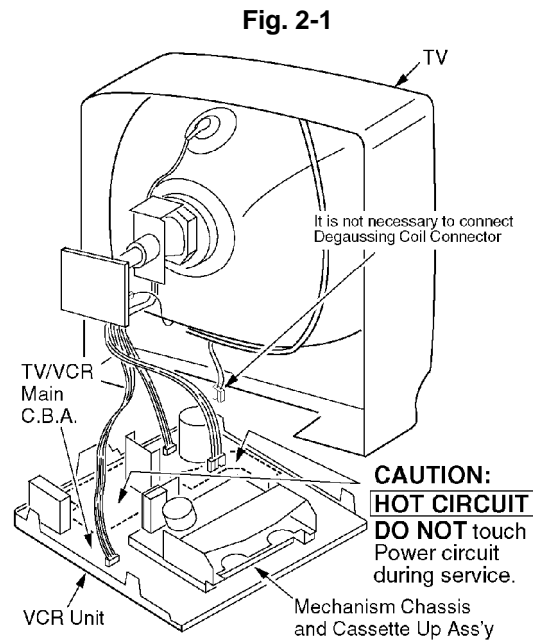
Service Position	Purpose
Service Position (1)	Mechanism check Mechanical adjustment Electrical adjustment
Service Position (2)	TV/VCR Main C.B.A. check

**CAUTION:**

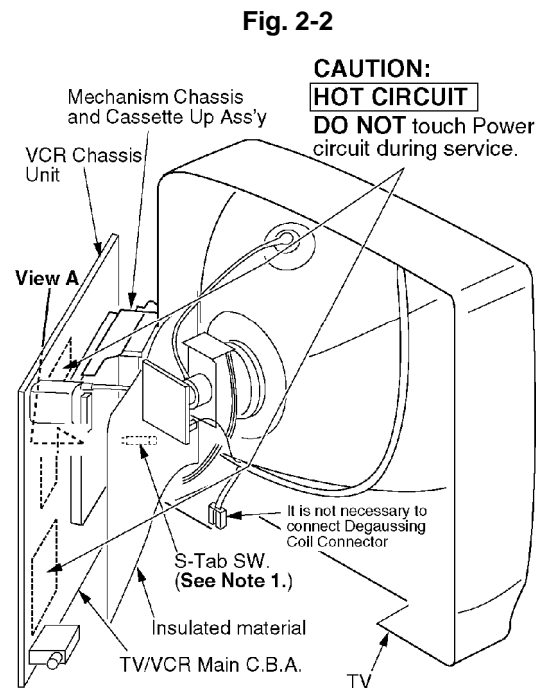
**HOT CIRCUIT (Primary circuit) exists on the TV/VCR Main C.B.A. Use extreme care to prevent accidental shock when servicing.**



### 5.1.3.2. Service Position (1)



### 5.1.3.3. Service Position (2)

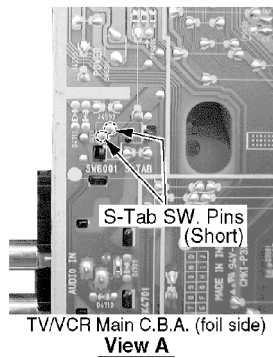


#### Note:

1. It is possible that the S-Tab SW. may not work correctly in Service Position (2). (Recording can not be done). In this case, short the S-Tab SW. Pins on the foil side of the TV/VCR Main C.B.A. to turn this SW. on.

**Fig. 2-3**





Alternative method:  
Cover the S-Tab SW. with masking tape.

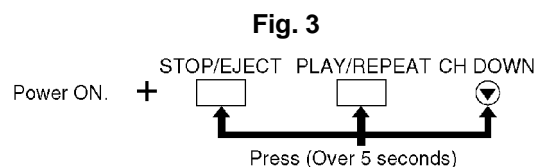
#### 5.1.4. HOT CIRCUIT

Primary circuit exists on the TV/VCR Main C.B.A.

This circuit is identified as "HOT" on the C.B.A. and in the Service Manual. Use extreme care to prevent accidental shock when servicing.

#### 5.1.5. SERVICE MODE

In order to inhibit detection of the Supply & Takeup Photo Transistors, Reel Sensor, and Cylinder Lock, press and hold STOP/EJECT, PLAY/REPEAT, and CH DOWN buttons on the unit together over 5 seconds in power on condition.



The unit goes into service mode.

In this mode, Mechanism movement can be confirmed. When removing Cassette Up Ass'y, it can be confirmed without a cassette.

To release from this mode, press POWER button off or disconnect AC Plug.

#### 5.1.6. DEFEATING THE AUTO TRACKING

To defeat the Auto Tracking Function, place the instrument in the STOP mode and place a jumper between TP6003 and TP6009 on the TV/VCR Main C.B.A. The tracking will be placed in the neutral position.

#### 5.1.7. CAUTION FOR INSTALLATION OF VCR UNIT

##### CAUTION:

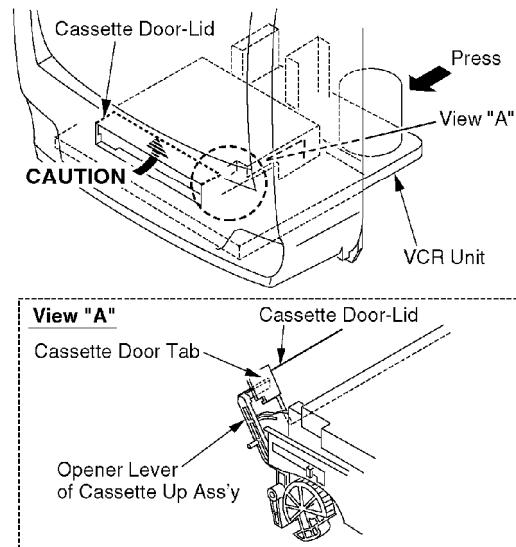
Opener Lever may be damaged when VCR Unit is installed, with Cassette Door-Lid and Opener Lever of Cassette Up Ass'y set incorrectly.

Install the VCR Unit as follows:

1. Swing the Cassette Door-Lid all the way open until the Cassette Door tab clears the Opener Lever.
2. Make sure that all guide tabs are aligned properly. Then, press the VCR Unit straight in.



Fig. 4

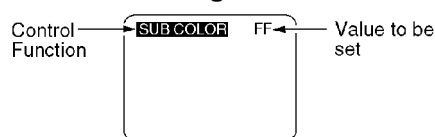


#### 5.1.8. HOW TO INITIALIZE MEMORY IC

After the Memory IC (IC6004) or TV/VCR Main C.B.A. is replaced, be sure to set the Default value to Memory IC as shown in "Memory IC Reference Table" below.

1. Press and hold **STOP**, **PLAY**, and **VOL-** buttons on the unit together over 5 seconds with no cassette inserted.  
The adjustment overlay will appear to Enter EVR Adjustment mode.

Fig. 5-1

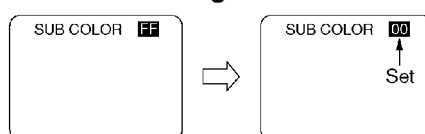


2. Press **ACTION** key on the remote and **VOL-** button of operation panel on the unit together. The overlay color will be changed from red to green. (All Control functions are displayed.)
3. Set the Default value of all Control functions using a remote control as shown in "Memory IC Reference Table."

#### Note:

For Selecting Control functions and setting Default value, refer to "**How to adjust:**" of How to enter EVR adjustment mode in **ADJUSTMENT PROCEDURES**.

Fig. 5-2





4. Press and hold STOP, PLAY, and VOL- buttons on the unit together over 5 seconds again or press the POWER button OFF to release EVR Adjustment mode.

The Default value will be written to Memory IC (IC6004).

5. Perform all EVR Adjustments. (Refer to "**EVR (Electronic Variable Register) ADJUSTMENT WITH THE REMOTE CONTROL**" of ELECTRICAL ADJUSTMENT in ADJUSTMENT PROCEDURES.)

**Memory IC Reference Table**

Control functions	Address	Range	Default
SUB COLOR	00	C0 - FF, 00 - 3F	00
SUB TINT	01	E0 - FF, 00 - 1F	00
SUB BRIGHT	02	C0 - FF, 00 - 3F	DE
CONTRAST	03	C1 - FF, 00	00
SUB SHARPNESS	04	E0 - FF, 00 - 1F	F0
R CUT -OFF	05	00 - 7F	1E
G CUT -OFF	06	00 - FD	3C
B CUT -OFF	07	00 - FD	3C
G DRIVE	08	00 - 7F	40
B DRIVE	09	00 - 7F	40
SUB CONTRAST	0A	00 - 0F	06
H-CENTER	0B	00 - 0F	08
V SIZE	0D	00 - 7F	40
V POSITION	0E	00 - 7F	03
ANR	10	00 - EF	89
PIC	11	00 - EF	86
VV COLOR	12	C0 - FF, 00 - 3F	00
VV TINT	13	E0 - FF, 00 - 1F	00
VV SHARPNESS	14	E0 - FF, 00 - 1F	F8
PG SHIFTER	15	01 - FD	80
FM ANT	18	00 - 01	00

**Note:**

1. Address is not displayed on the TV screen.  
Other Addresses except above are not used.

### 5.1.9. METHOD FOR LOADING/UNLOADING OF MECHANISM

#### 5.1.9.1. (Manual Method)

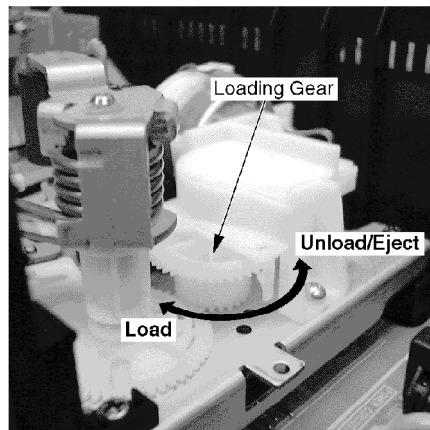
Turn the Loading Gear clockwise (for loading) or counterclockwise (for unloading) using needlenose pliers etc.

**Note:**

**Do not use this method if Mechanism is jammed or locked.**

**Fig. 6-1**





#### 5.1.9.2. (Electrical Method)

Apply +10.0 V DC Power Supply to the Loading Motor terminals.

Loading

DC + to Portion "a," DC - to Portion "b"

Unloading

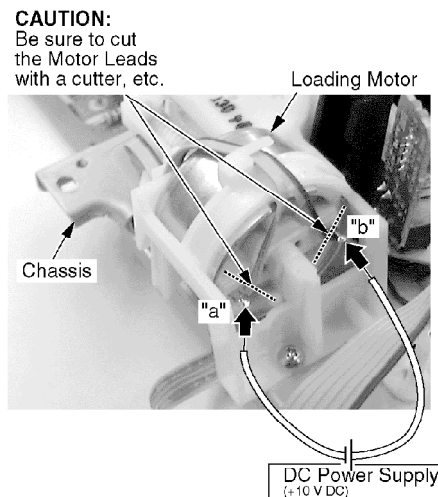
DC - to Portion "a," DC + to Portion "b"

#### **CAUTION:**

**Before applying DC Power Supply, be sure to cut the Motor Leads with a cutter, etc.**

**Otherwise, the Loading Motor Drive IC (IC2501) may be damaged.**

Fig. 6-2

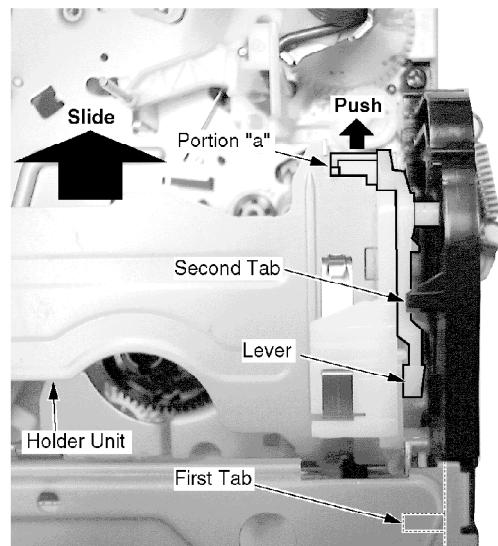


#### 5.1.9.2.1. WHEN LOADING WITHOUT A CASSETTE

When loading without a cassette, push Portion "a" on the Holder Unit of Cassette Up Ass'y so that the Lever clear the First Tab and Second Tab.

Fig. 6-3





### 5.1.10. HOW TO REMOVE A JAMMED TAPE

#### CAUTION:

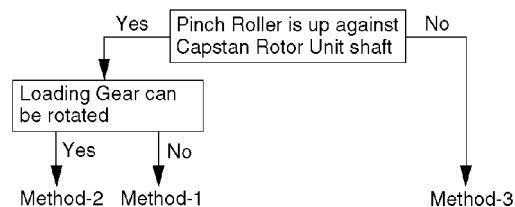
**Wiper Arm Unit may be damaged or its spring may be out of place when the jammed tape is removed by force.**

Remove a jammed tape as follows:

#### 5.1.10.1. Manual Method

When a tape jam is encountered, check the tape loading condition and use the following procedure to remove a tape jam.

**Fig. 7-1**

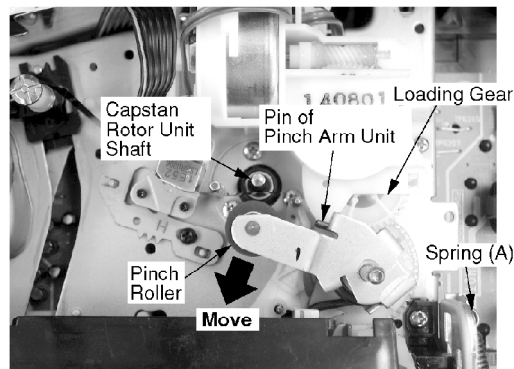


#### 5.1.10.1.1. Method -1:

- 1. Move the Pinch Roller Unit out by unhooking the Pin of Pinch Arm Unit so that the Pinch Roller is separated from the Capstan Rotor Unit shaft.**

**Fig. 7-2**

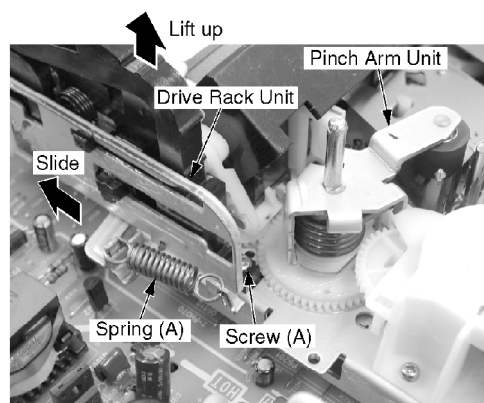




Top View

2. Remove the tape from the tape path.
3. Rewind the tape into the cassette by rotating the Center Clutch Unit counterclockwise.
4. Unhook Spring (A) of the Drive Rack Arm.
5. Remove Screw (A).
6. Lift the Cassette Up Ass'y. While pulling the Cassette Up Ass'y out far enough so that it clears the Drive Rack Arm, slide the Drive Rack Unit as indicated by the arrow to remove the cassette tape from the Cassette Up Ass'y.
7. Check the cause of mechanical trouble and repair.

Fig. 7-3



5.1.10.1.2. Method -2:

1. Rotate Loading Motor counterclockwise with needlenose pliers, etc. so that the Pinch Roller is separated from the shaft of the Capstan Rotor Unit.
2. Perform Step 2 through Step 7 of Method -1.

5.1.10.1.3. Method -3:



## 1. Perform Step 2 through Step 7 of Method -1.

### Note:

After repairing mechanical trouble, make sure that all gear alignments are correct, especially the Wiper Arm Unit and Drive Rack Unit of Cassette Up Ass'y. (Refer to "**EJECT Position Confirmation**" in DISASSEMBLY/ASSEMBLY PROCEDURES.)

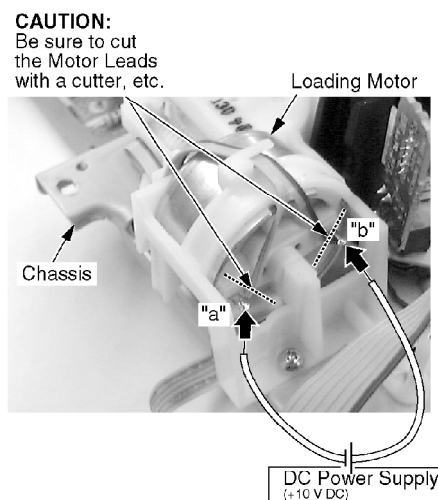
### 5.1.10.2. Electrical Method

Electrical method can only be performed when the mechanism is moved by rotating the Loading Gear.

#### CAUTION:

1. Before applying DC Power Supply, be sure to cut the Motor Leads with a cutter, etc.  
Otherwise, the Loading Motor Drive IC (IC2501) may be damaged.
  2. If loading does not start in approx. 2 seconds after DC Power Supply is applied, DO NOT continue to apply DC Power Supply. Instead, perform "Manual Method."
- 
1. Be sure to cut the Motor Leads with a cutter, etc.
  2. Apply +10.0 V DC Power Supply to the Loading Motor terminals.
  3. When the Loading Posts reach the fully unloaded position, remove the Power Supply.

Fig. 8



4. Rewind the tape into the cassette by turning the Center Clutch Unit counterclockwise.
5. Eject the cassette by applying +10.0 V DC Power Supply again.



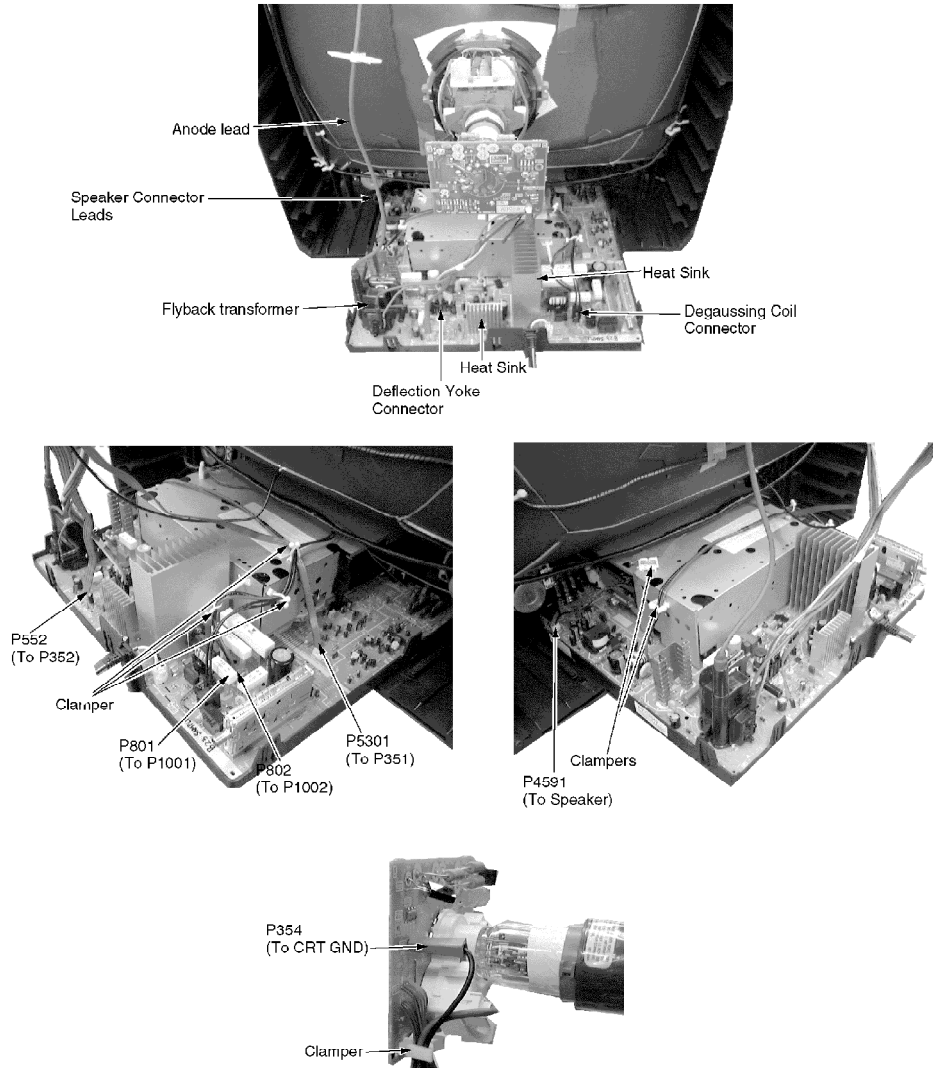
### 5.1.11. WIRE AND LEAD POSITION DIAGRAM

**Fig. 9**

After servicing, make sure that all wires, leads, and clampers are placed in their original position. It is important for the best operation of the unit.

**Note:**

No lead wires or flat cables should touch any heating parts or the Heat Sink Plate.  
Use extreme care especially for followings.



### 5.1.12. HOW TO SET TRACKING TO THE NEUTRAL POSITION

Ejecting the cassette tape and then reinserting it will reset the tracking to the Neutral position.

### 5.1.13. BLACK SCREWS ON THE CHASSIS

Black Screws are used on the Mechanism Chassis to identify screws that require adjustment.

### 5.1.14. HOW TO RESET ALL COMBINATION VCR MEMORY FUNCTIONS

To reset (clear) the select language, channel auto set and set clock functions to their initial power on condition (power on, no cassette inserted), hold down the PLAY and FF buttons on the unit together for more than 5 seconds.

Power will shut off.

### 5.1.15. HOW TO CONFIRM AUTO CLOCK SET FEATURE



1. Connect an RF cable from the output of one unit to the input of the test unit.
2. Select corresponding RF channels.
3. Playback a recording of P.B.S. channel including clock set data and confirm this feature.

#### 5.1.16. VARIABLE VOLTAGE ISOLATION TRANSFORMER

An Isolation Transformer should always be used during the servicing of Combination VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect Combination VCR from being damaged by accidental shorting that may occur during servicing.

Also, when troubleshooting the above type of Power Supply Circuit, a variable isolation transformer is required in order to increase the input voltage slowly.

#### 5.1.17. SPECIAL NOTE

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.

#### 5.1.18. MODEL NO. IDENTIFICATION MARK

Use Marks shown in the chart below to distinguish the different models included in this Service Manual.

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

**Note:**

Refer to Item 3 of Schematic Diagram Notes of Schematic Diagram and Circuit Board Layout Notes, for mark "PT."

## 6. DISASSEMBLY/ASSEMBLY PROCEDURES

### 6.1. CABINET SECTION

#### 6.1.1. Disassembly Flowchart

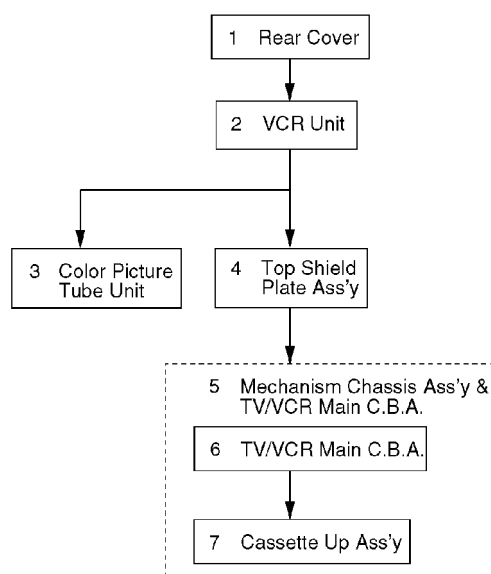
Perform all disassembly procedures in the order described in the "Disassembly Flowchart" shown below. When reassembling, use the reverse procedure.

**CAUTION:**

**Disconnect AC plug before disassembly.**

Fig. D1





### 6.1.2. Disassembly Method

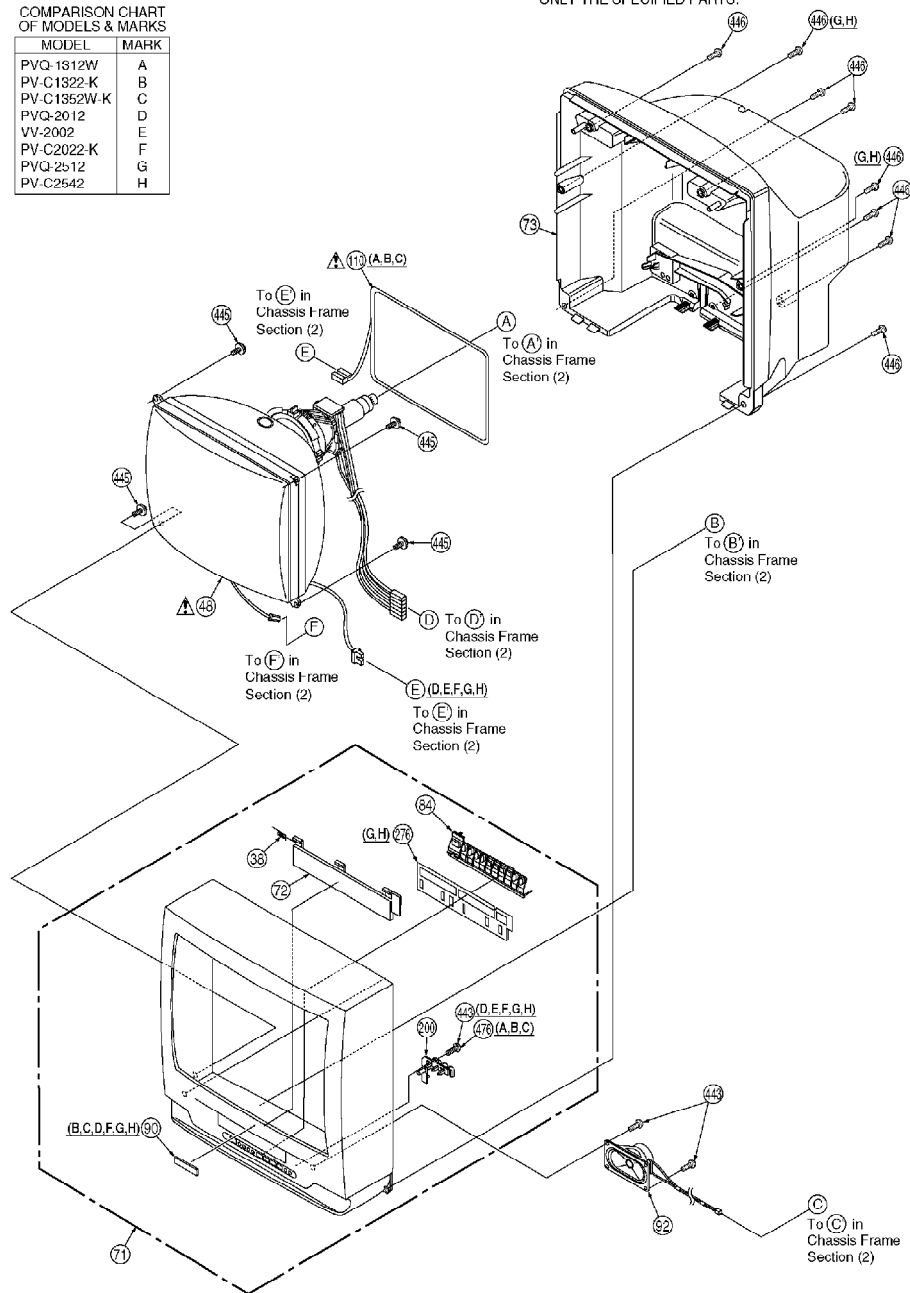
STEP No.	Ref. No.	PART	Fig. No.	REMOVE	Note
1	(73)	Rear Cover	D2	6(446)	---
2	-	VCR Unit	D4 D5	Anode Cap, P354, CRT C.B.A., Deflection Yoke Connector, Degaussing Coil Connector, Clampers, P4591, Tabs	1
3	(49)	Color Picture Tube Unit	D2	4(445)	2
4	(91)	Top Shield Plate Ass'y	D3	4(439), (405)	---
5	-	Mechanism Chassis Ass'y & TV/VCR Main C.B.A.	D3	2(450), 2(450), Locking Tabs,	3
6	(19)	TV/VCR Main C.B.A.	D3	P3001, P6201, P4001, P4092	4
7	(61)	Cassette Up Ass'y	D3	3(449), Locking Tab, Spring	5

**Fig. D2**



MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H

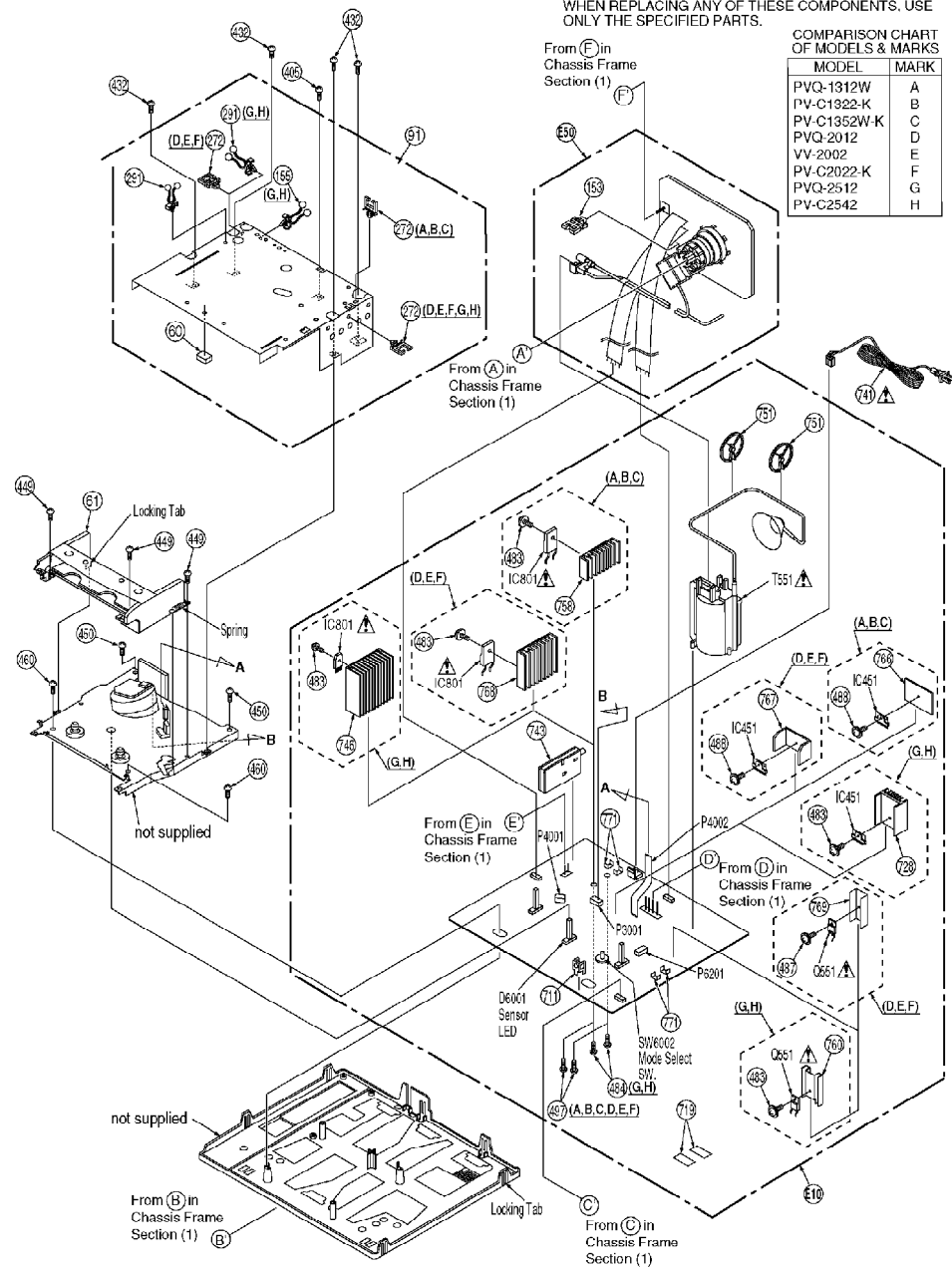
**IMPORTANT SAFETY NOTICE**  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.



**Fig. D3**



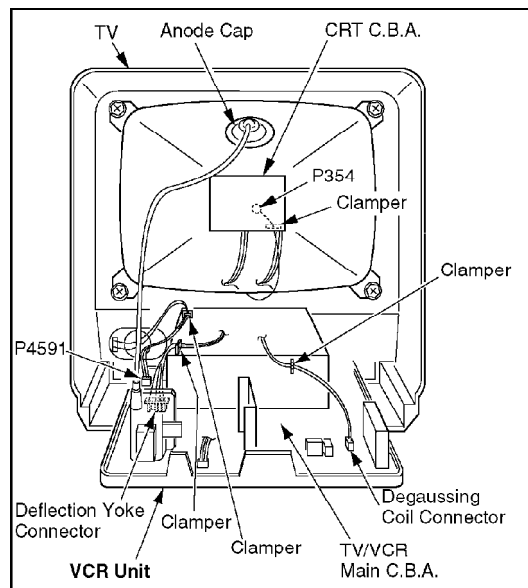
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H



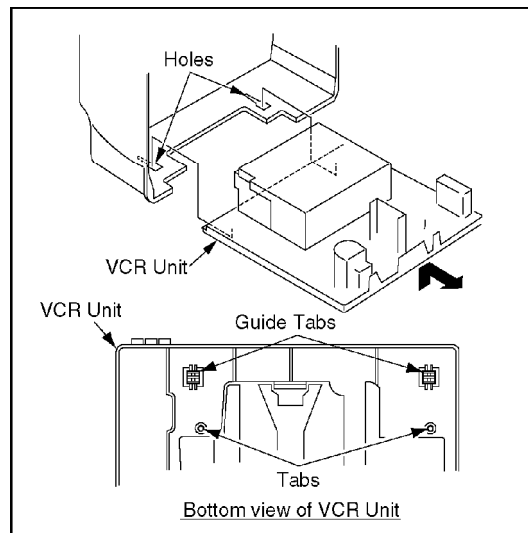
## 1. Removal of VCR Unit

24





**Fig. D5**



## Installation of VCR Unit

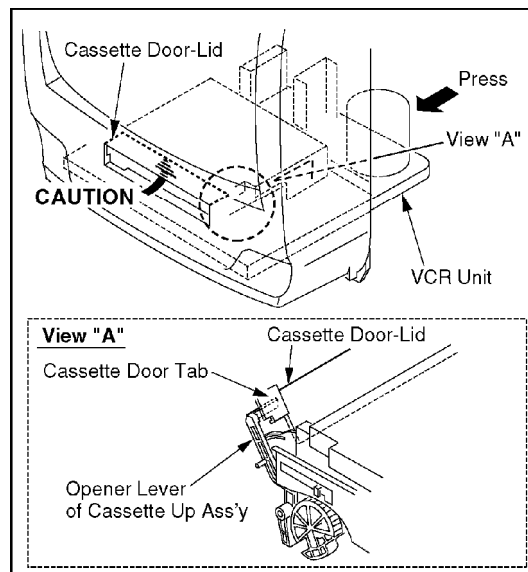
### **CAUTION:**

Opener Lever may be damaged when VCR Unit is installed, with Cassette Door-Lid and Opener Lever of Cassette Up Ass'y set incorrectly.

- A. When installing the VCR Unit, swing the Cassette Door-Lid all the way open until the Cassette Door tab clears the Opener Lever.
- B. Make sure that all guide tabs are aligned properly.  
Then, press the VCR Unit straight in.

**Fig. D6**





## 2. Removal of Color Picture Tube Unit

Place the Unit face down on a soft cloth before removing the Color Picture Tube Unit.

## 3. Installation of Mechanism Chassis Ass'y and TV/VCR Main C.B.A.

When installing 2 Screws (449), slide the Holder Unit of the Cassette Up Ass'y (Refer to "**WHEN LOADING WITHOUT A CASSETTE**" in SERVICE NOTES) to tighten screws. Then, slide it back to the EJECT Position.

## 4. Removal of TV/VCR Main C.B.A.

When removing the P4002 Flat Cable from the Connector P4092 on the AC Head, care must be taken to hold the Connector P4092 stable to avoid damaging it.

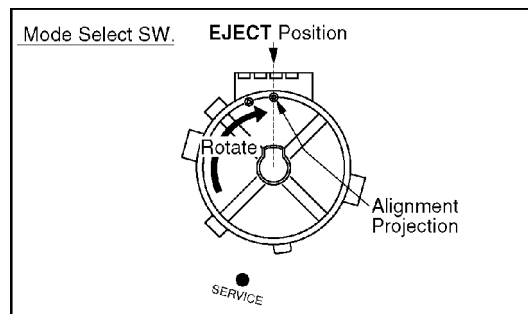
Otherwise, a satisfactory picture and secure precise tracking will not be achieved. (Refer to "**TAPE INTERCHANGEABILITY ADJUSTMENT**" in MECHANICAL ADJUSTMENT.)

Installation of TV/VCR Main C.B.A.

A. Make sure the Mode Select SW. on the TV/VCR Main C.B.A. is in EJECT position. If not, rotate the Mode Select SW. until the alignment projection is in the EJECT Position.

Fig. D7





**B. Install the Mechanism Chassis and Cassette Up Ass'y straight onto the TV/VCR Main C.B.A. so that the Sensor LED clears the hole in the Mechanism Chassis and that 3 Connectors (P6201, P3001 and P4001) are aligned and seated securely.**

## **5. Installation of Cassette Up Ass'y**

- A. Confirm that the Locking Tab under the Cassette Up Ass'y is in Hole on the Mechanism Chassis when installing the Cassette Up Ass'y. Then, slide the Cassette Up Ass'y towards the back.**
- B. When installing 2 Screws (449), slide the Holder Unit (Refer to "WHEN LOADING WITHOUT A CASSETTE" in Service Notes) to tighten screws. Then, slide it back to the EJECT Position.**
- C. Hook Spring to the Drive Rack Arm on the Mechanism Chassis.**

## **6.2. MECHANISM SECTION**

### **6.2.1. Disassembly/Reassembly Method**



This procedure starts with the condition that the cabinet parts and TV/VCR Main C.B.A. have been removed.  
When reassembling, perform the step(s) in the reverse order.

**Perform all disassembly/reassembly and alignments procedures in EJECT Position.**

Step No.	Prior Step(s)	Part	Fig. No.	Remove	Alignment/Adjustment
①	-----	Not used	-	-	
②	-----	Full Erase Head	J2	(L-1)	
③	1	Cylinder Unit	J2	2(S-2), 3(S-3), Flexible Cable, Head Amp C.B.A., Unsolder	TAPE INTERCHANGEABILITY Adjustment
④	-----	Capstan Belt	J3-1	-	
⑤	-----	Support Angle	J3-1	(S-4), (S-5)	
⑥	5	Intermediate Gear B	J3-1	(L-2)	Gear Alignment
⑦	4,5,6	Main Cam Gear	J3-1	Main Cam Push Nut	Gear Alignment
⑧	4	Center Clutch Unit	J4-1	(W-1)	
⑨	4,8	Changing Gear Spring	J4-1	-	
⑩	4,8,9	Changing Gear	J4-1	-	
⑪	4,8,9,10	Idler Arm Unit	J4-1	-	
⑫	-----	Reel Gear	J5-1	2(L-3)	
⑬	4,5,6,7,8,9,10	Main Rod	J5-1	(W-2), (L-4)	Gear Alignment
⑭	-----	Not used	-	-	
⑮	4	Capstan Motor Unit	J6	3(S-6)	
⑯	-----	Not used	-	-	
⑰	-----	Not used	-	-	
⑱	-----	Not used	-	-	
⑲	4,8,9,10,13	T Loading Arm Unit	J7-1	-	Gear Alignment
⑳	4,5,6,7,8,9,10,13,19	S Loading Arm Unit	J7-1	-	Gear Alignment
㉑	-----	T Brake Unit	J8-1	-	
㉒	-----	Tension Control Arm Unit	J8-1	3(L-5)	
㉓	21	T Reel Table	J8-1	-	
㉔	22	S Reel Table	J8-1	-	
㉕	22	Tension Arm Unit	J8-1	2(L-6), (P-1), (P-2)	
㉖	22,25	Loading Post Base-T Unit	J9	-	P2 AND P3 POST HEIGHT,
㉗	22,25	Loading Post Base-S Unit	J9	-	TAPE INTERCHANGEABILITY Adjustment
㉘	-----	Opener Piece	J10-1	2(L-7)	
㉙	4,5,6,7	Drive Rack Arm	J10-1	-	
㉚	28	Pinch Arm Unit	J10-1	-	
㉛	28,30	PS Arm Unit	J10-1	-	
㉜	5,5,28	Intermediate Gear A	J10-1	-	Gear Alignment
㉝	-----	Motor Block Unit	J11	2(S-9)	
㉞	-----	Audio Control Head Unit	J11	(S-10)	TAPE INTERCHANGEABILITY Adjustment
㉟	5,6,28,30,32,33	Lift Gear	J11	-	
㊱	-----	Not used	-	-	
㊲	22,25	Tension Arm Boss	J11	(L-8)	
㊳	-----	SS Brake Arm Unit	J5-1	(L-9), (P-3)	
㊴	-----	Cleaner Arm Unit (Model with Cleaner Arm Unit)	J11	(L-10)	

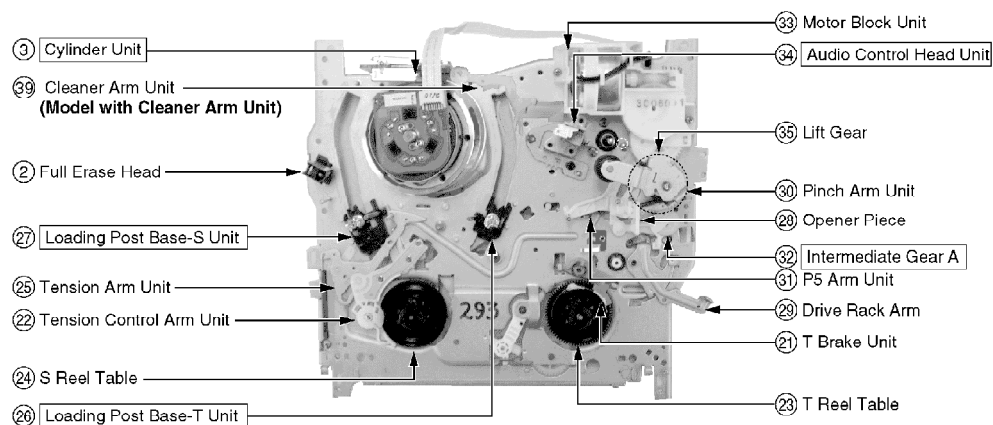
## 6.2.2. Inner Parts Location

**Note:** BOX indicates alignment (Gear Alignment or Mechanical Adjustment) required when a part is replaced.

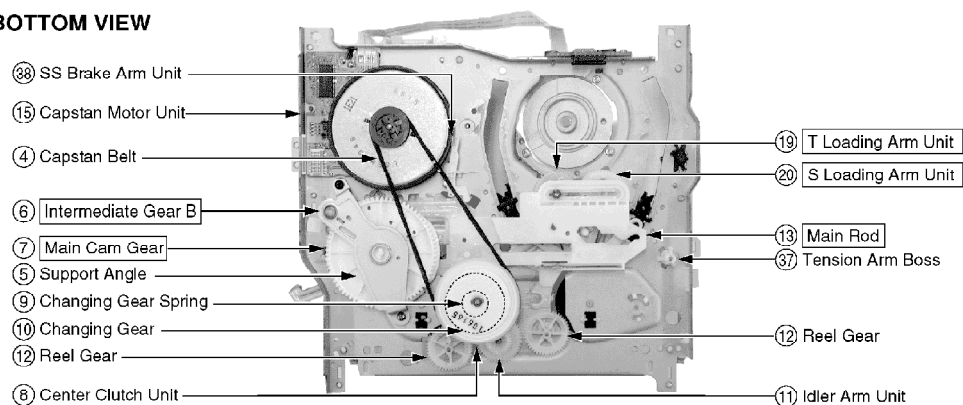
**Fig. J1-1**



## TOP VIEW



## BOTTOM VIEW

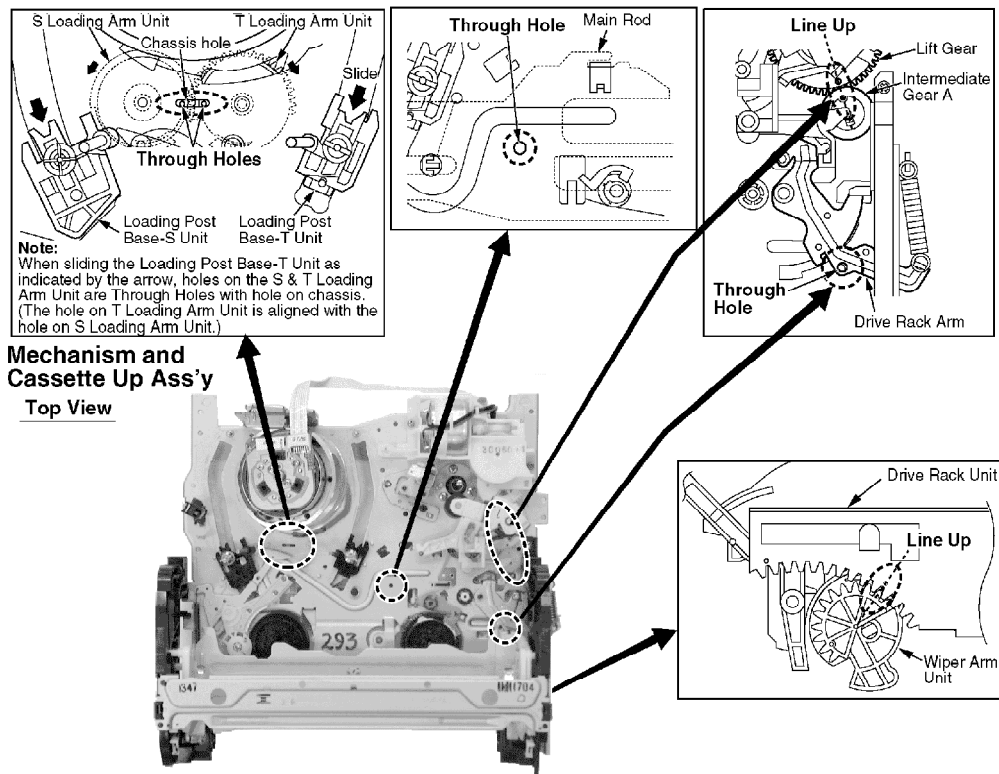


## 6.2.3. EJECT Position Confirmation

Fig. J1-2



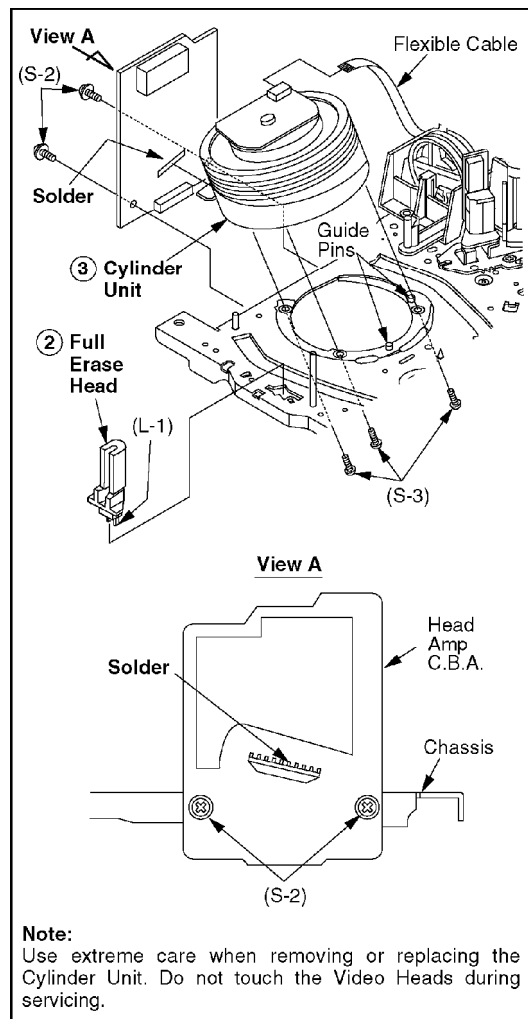
Check the following alignment points to confirm that the Mechanism and Cassette Up Ass'y are in the **EJECT** Position from the top side.



#### 6.2.4. Full Erase Head and Cylinder Unit

Fig. J2





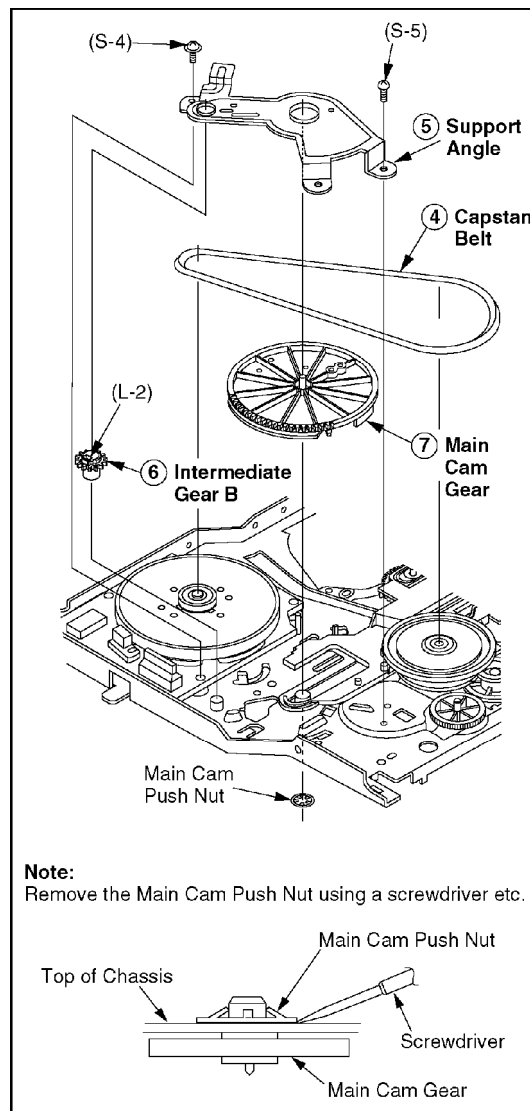
#### 6.2.4.1. Reassembly Notes

1. After replacing the Cylinder Unit, clear the Total elapsed "Cylinder rotation" time (in hours) to 0. Refer to "USAGE SCREEN MODE" in SERVICE NOTES.

#### 6.2.5. Capstan Belt, Support Angle, Intermediate Gear B, and Main Cam Gear

Fig. J3-1



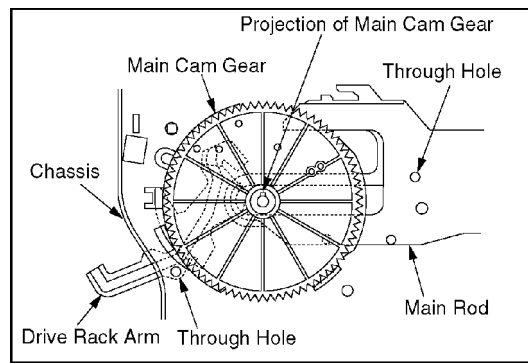


#### 6.2.5.1. Reassembly Notes

1. **Alignment of Main Cam Gear, Drive Rack Arm, and Main Rod**
  - A. Confirm that the hole on Main Rod is a Through Hole with a hole on chassis.
  - B. Confirm that the hole on Drive Rack Arm is a Through Hole with a hole on chassis.
  - C. Install the Main Cam Gear so that the projection of Main Cam Gear is in the upward position as shown.

Fig. J3-2



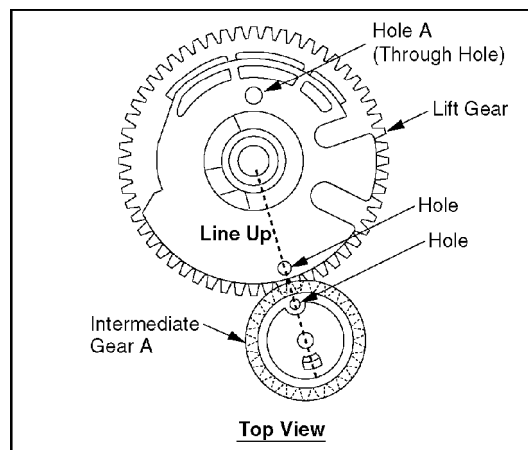


## 2. Confirmation/Alignment of Intermediate Gear B, Main Cam Gear, and Intermediate Gear A

A. Confirm that the Hole A on Lift Gear is a Through Hole with a hole on chassis.

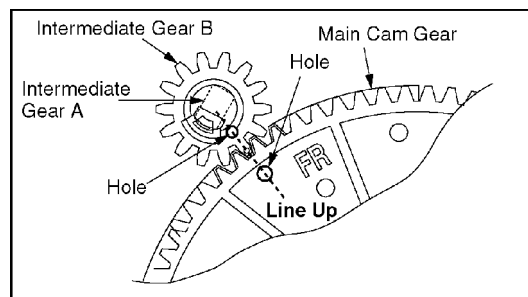
B. Confirm that the hole on Intermediate Gear A is aligned with the hole on Lift Gear.

Fig. J3-3



C. Install the Intermediate Gear B so that the hole on the Intermediate Gear B is aligned with the hole on the Main Cam Gear.

Fig. J3-4



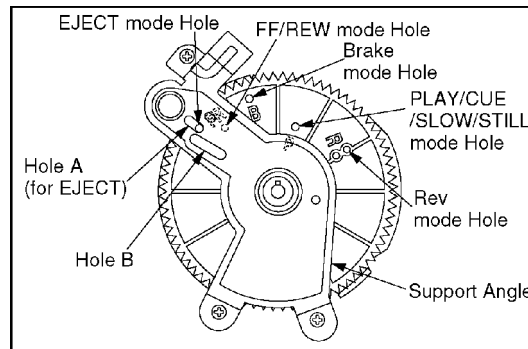
## 3. Holes on Main Cam Gear

A. The EJECT mode Hole on Main Cam Gear should be a Through



**Hole with Hole A on Support Angle in EJECT mode. The each mode Hole on Main Cam Gear should be a Through Hole with Hole B on Support Angle in each mode.**

**Fig. J3-5**



#### **4. Main Cam Gear Kit**

**A. Main Cam Gear is supplied as a Main Cam Gear Kit only (Kit No. VVGS0009).**

**Main Cam Gear Kit consists of a Main Cam Gear and a Main Cam Push Nut.**

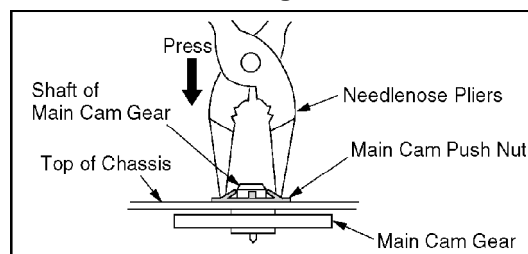
**However, Main Cam Push Nut is available separately as a replacement part.**

#### **5. Installation of Main Cam Gear and Main Cam Push Nut**

**A. After installing the Support Angle, install the Main Cam Push Nut with Needlenose Pliers etc. so that it is flush with the chassis.**

**There may be some slight scratches on the Shaft of Main Cam Gear, when removing the Main Cam Gear. In case that the Main Cam Gear can be installed securely without tottering, it is fine to use the one. If any tottering, install all new parts.**

**Fig. J3-6**

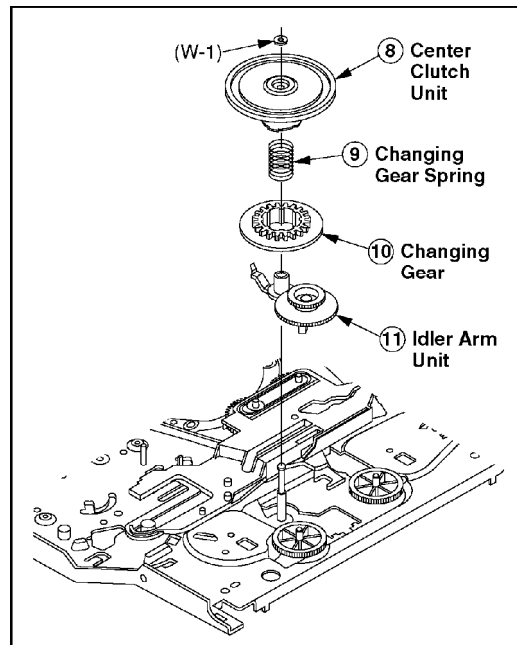


**6. The Main Cam Push Nut is not reusable. Install a new one.**

#### **6.2.6. Center Clutch Unit, Changing Gear Spring, Changing Gear, and Idler Arm Unit**



**Fig. J4-1**

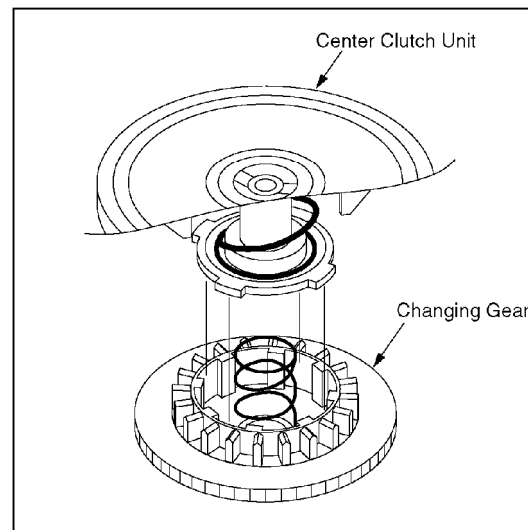


**6.2.6.1. Reassembly Notes**

**1. Installation of Center Clutch Unit**

**A. Fit the Center Clutch Unit into the Changing Gear.**

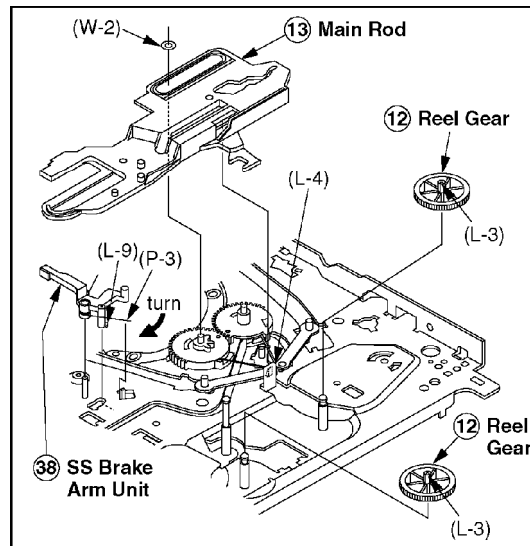
**Fig. J4-2**



**6.2.7. Reel Gear, Main Rod, and SS Brake Arm Unit**

**Fig. J5-1**





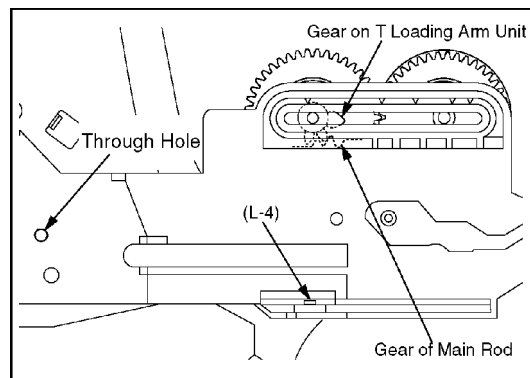
#### 6.2.7.1. Reassembly Notes

### 1. Alignment of Main Rod and T Loading Arm Unit

#### A. Align the Gear of T Loading Arm Unit with Gear of Main Rod.

Confirm that the Hole on Main Rod is a Through Hole with a hole on chassis.

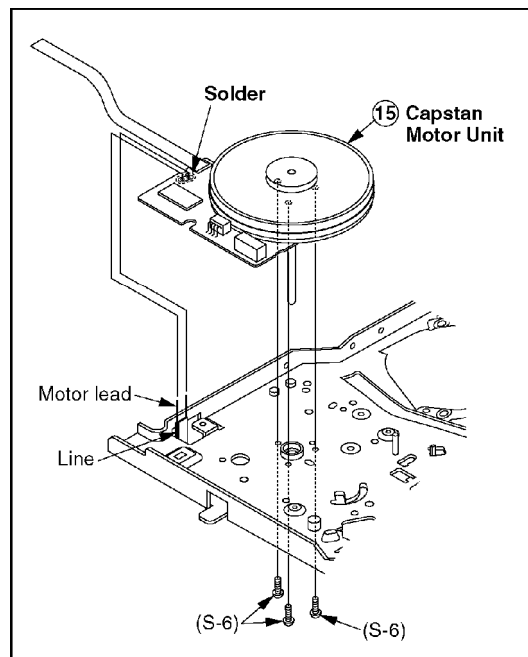
Fig. J5-2



### 6.2.8. Capstan Motor Unit

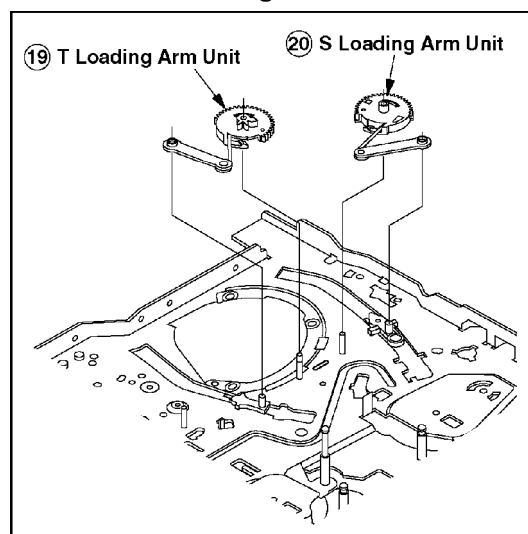
Fig. J6





### 6.2.9. T Loading Arm Unit and S Loading Arm Unit

Fig. J7-1

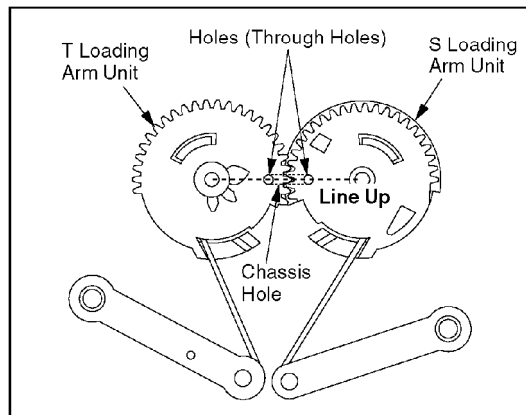


#### 6.2.9.1. Reassembly Notes

1. Alignment of T Loading Arm Unit and S Loading Arm Unit
  - A. Install the S Loading Arm Unit onto the chassis.
  - B. Install the T Loading Arm Unit so that the hole on T Loading Arm Unit is aligned with the hole on S Loading Arm Unit.
  - C. Confirm that the holes on the S & T Loading Arm Unit are Through Holes with hole on chassis.

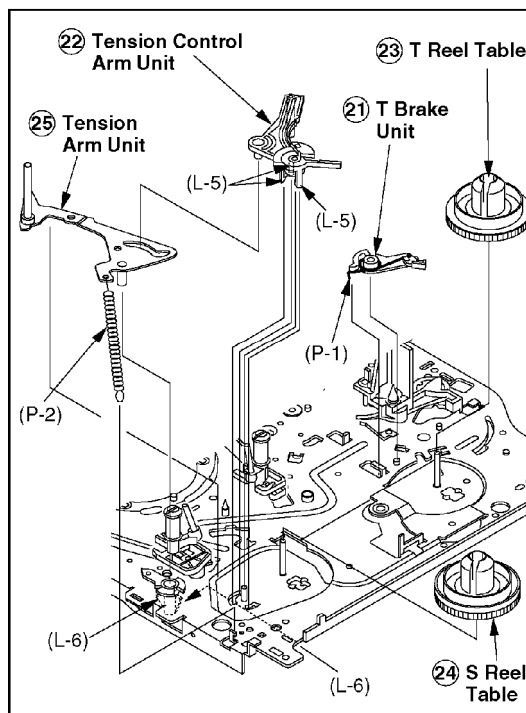
Fig. J7-2





## 6.2.10. T Brake Unit, Tension Control Arm Unit, T Reel Table, S Reel Table, and Tension Arm Unit

Fig. J8-1

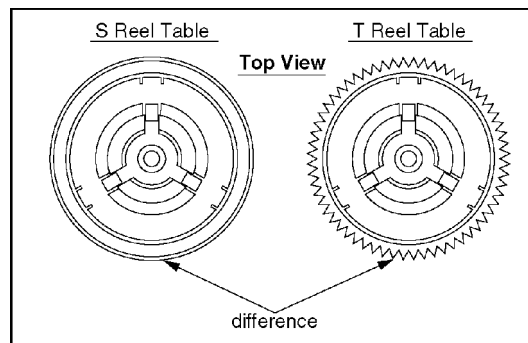


### 6.2.10.1. Reassembly Notes

#### 1. How to distinguish between S Reel Table and T Reel Table

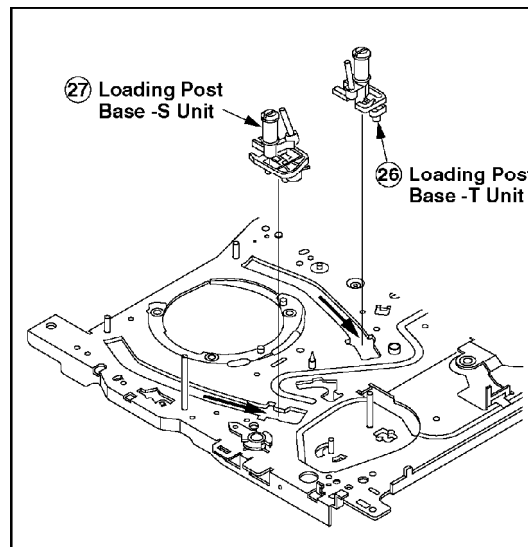
Fig. J8-2





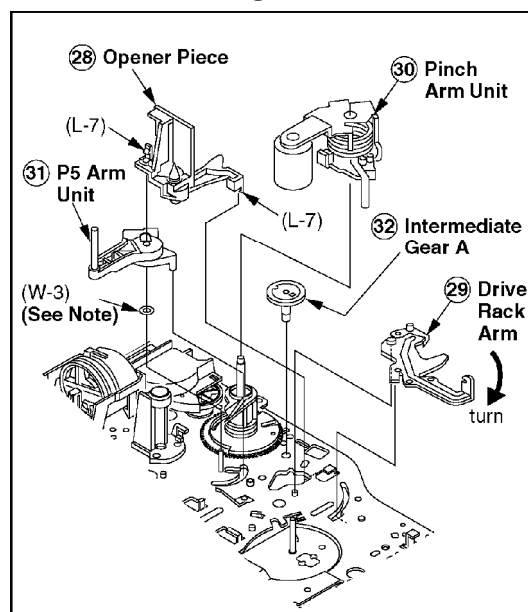
## 6.2.11. Loading Post Base -T Unit and Loading Post Base -S Unit

Fig. J9



## 6.2.12. Opener Piece, Drive Rack Arm, Pinch Arm Unit, P5 Arm Unit, and Intermediate Gear A

Fig. J10-1





**Note:**

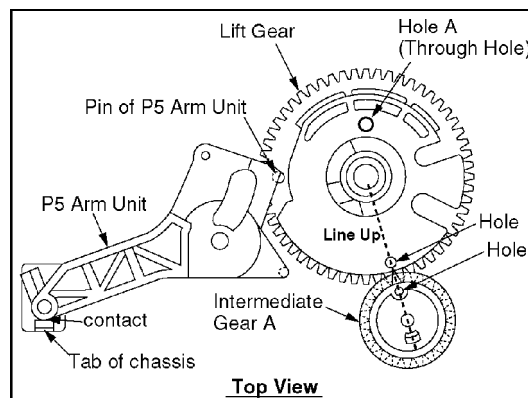
In early units, a washer is used. When servicing the washer or the P5 Arm Unit, replace only the P5 Arm Unit with a new one, and remove the washer.

**6.2.12.1. Reassembly Notes**

**1. Installation/Alignment of Intermediate Gear A, Lift Gear and P5 Arm Unit**

- A. Rotate the Lift Gear so that Hole A on Lift Gear is a Through Hole with a hole on chassis.**
- B. Install the Intermediate Gear A so that the hole on Intermediate Gear A is aligned with the hole on Lift Gear.**
- C. Install the P5 Arm Unit so that it contacts with the tab of chassis.**

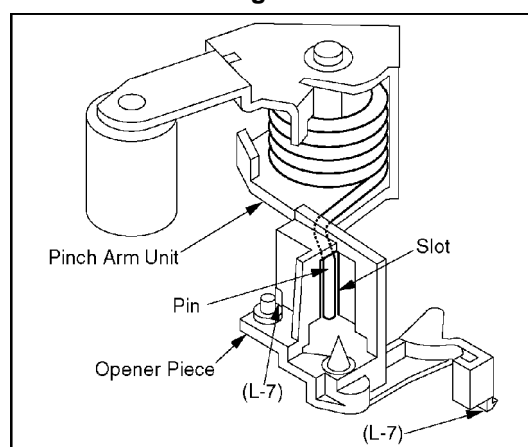
**Fig. J10-2**



**2. Installation of Opener Piece**

- A. Install the Opener Piece so that the slot of the Opener Piece is inserted to the Pin of Pinch Arm Unit**

**Fig. J10-3**

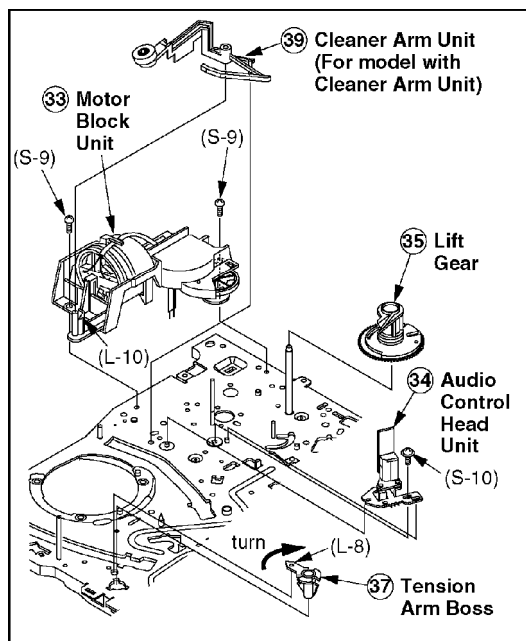


**6.2.13. Motor Block Unit, Audio Control Head Unit, Lift Gear, Tension Arm Boss,**



## and Cleaner Arm Unit

Fig. J11



## 6.3. CASSETTE UP ASSEMBLY SECTION

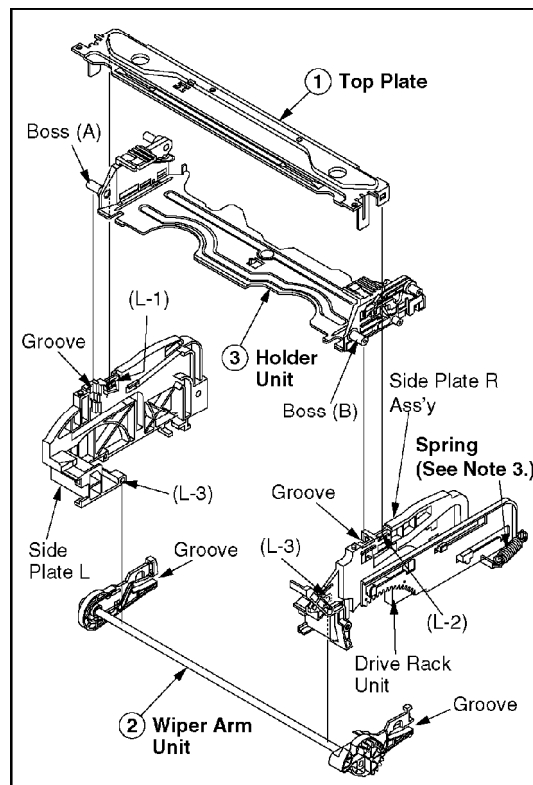
This chart indicates Step/Location No. of Parts to be serviced and prior steps to gain access items to be serviced when disassembling. When reassembling, perform the step(s) in the reverse order.

Step/Location No.	Prior Step(s)	Part	Fig. No.	Remove	Alignment/Adjustment
①	-----	Top Plate	K1-1	(L-1), (L-2)	
②	1	Wiper Arm Unit	K1-1	2(L-3)	Gear Alignment
③	1,2	Holder Unit	K1-1	-	
④	-----	Opener Lever	K2	2(L-4)	
⑤	1,2,3,4	Drive Rack Unit	K2	-	

### 6.3.1. Top Plate, Wiper Arm Unit, and Holder Unit

Fig. K1-1





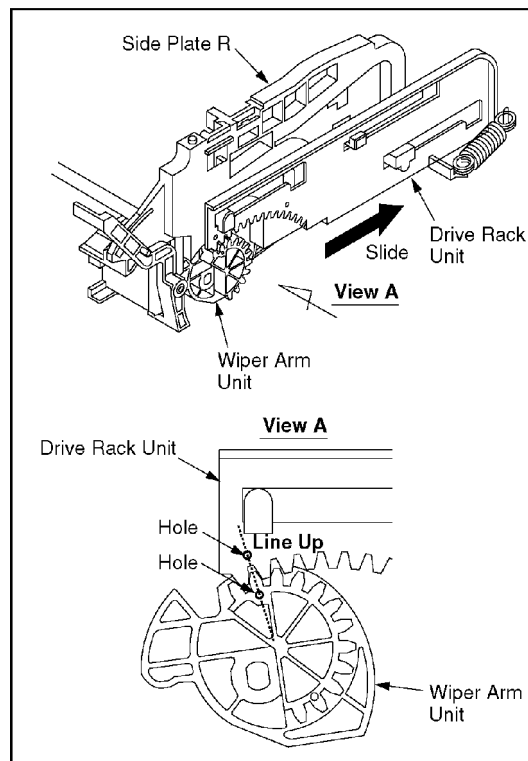
#### 6.3.1.1. Reassembly Notes

### 1. Alignment of Wiper Arm Unit and Drive Rack Unit

- A. Slide the Drive Rack Unit to the far right as indicated by the arrow.
- B. Install the Wiper Arm Unit so that the hole on the Wiper Arm Unit is aligned with the hole on the Drive Rack Unit.

Fig. K1-2

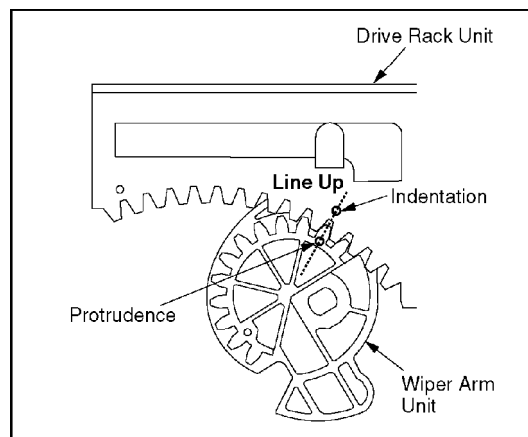




## 2. Installation of Holder Unit

- A. Turn the Wiper Arm Unit so that the grooves on each end are aligned with the each groove on Side Plate L and R.
- B. Insert Holder Unit boss (A) and (B) into the grooves as shown in Fig. K1-1.
- C. Finally, in the EJECT Position, confirm that the protrudence on the Wiper Arm Unit is aligned with the indentation on the Drive Rack Unit.

Fig. K1-3

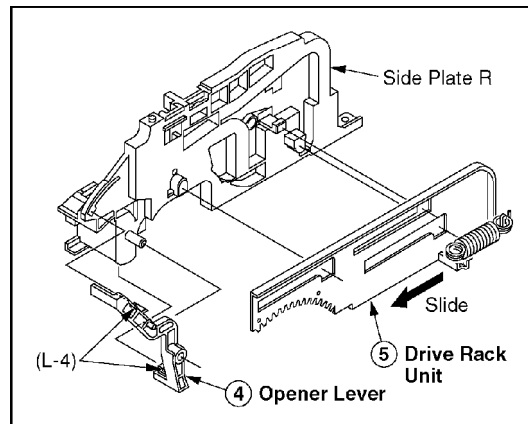


3. Make sure to hook the spring to the Drive Rack Arm of Mechanism chassis.



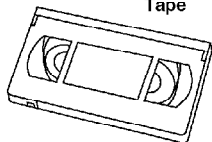
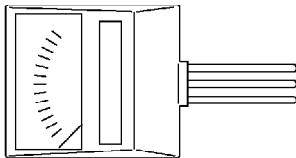
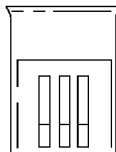



### 6.3.2. Opener Lever and Drive Rack Unit

Fig. K2



## 7. ADJUSTMENT PROCEDURES

### 7.1. SERVICE FIXTURES AND TOOLS

<b>VFMS0003H6</b> <b>VHS Alignment Tape</b>  <table><tr><td>Video</td><td>Color Bar &amp; Monoscope</td></tr><tr><td>Audio</td><td>6kHz(MONO)</td></tr></table>	Video	Color Bar & Monoscope	Audio	6kHz(MONO)	<b>Back Tension Meter</b> (Made in USA., Purchase Locally) 	<b>VFK27</b> <b>Head Cleaning Stick</b> 
Video	Color Bar & Monoscope					
Audio	6kHz(MONO)					
<b>VFK0330</b> <b>H-Position Adjustment Driver</b> 	<b>VFKS0081</b> <b>Grease</b> 	<b>VFK0329</b> <b>Post Adjustment Driver</b> 				

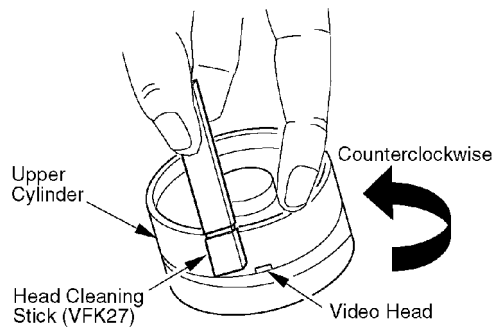
### 7.2. MECHANICAL ADJUSTMENT

#### 7.2.1. CLEANING PROCEDURE FOR THE UPPER CYLINDER UNIT

1. While slowly turning the Upper Cylinder Unit counterclockwise by hand, gently rub the Video Heads with a Head Cleaning Stick (VFK27) moistened with Ethanol.  
When using a Cleaning Cassette, make sure to use "DRY" type only and be aware that excessive use can shorten head life.

Fig. M1





**Note:**

1. Do not rub vertically or apply excess pressure to the Video Heads. Do not turn the Upper Cylinder Unit clockwise while cleaning.
2. After cleaning, use a Dry Head Cleaning Stick (VFK27) to remove any Ethanol remaining on the cylinder tape path. Otherwise, tape damage will occur.

## 7.2.2. ADJUSTMENT PROCEDURES

### 7.2.2.1. BACK TENSION CONFIRMATION

**Purpose:**

To fine adjust the Back Tension so that the tape runs smoothly with a constant tension.

**Symptom of Misadjustment:**

- 1) If the tape tension is less than the specified value, the tape cannot come into proper contact with the Video Heads, resulting in poor picture playback.
- 2) If the tape tension is too high, the tape will soon be damaged.

**Equipment Required:**

Back Tension Meter (Made in U.S.A., Purchase Locally)  
VHS Cassette Tape (120-Minute Tape)

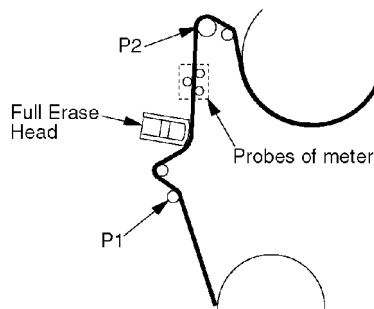
**Specification:**

22.4 gf $\pm$ 2.5 gf  
(0.220 N $\pm$ 0.025 N)

1. Play back a T120 cassette tape from the beginning for approx. 10 to 20 seconds to stabilize tape movement.
2. Insert a Tension Meter into tape path and measure the back tension.

Fig. M2-1

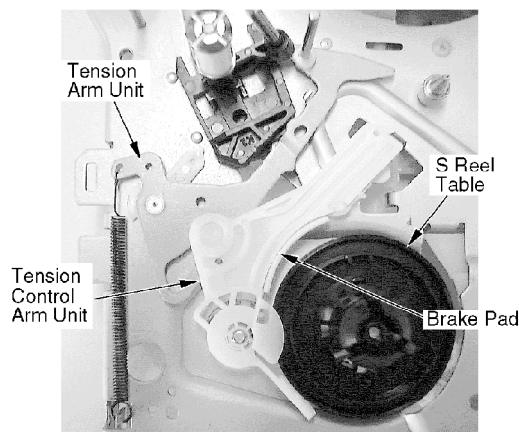




3. If the reading is out of specification, make sure that there is no dust or foreign material between the Brake Pad of Tension Control Arm Unit and the S Reel Table.

After cleaning, the reading of tension measurement is still out of specification, replace the Tension Arm Unit and the Tension Control Arm Unit.

Fig. M2-2



**Note:**

1. Be sure that the three probes of the meter are all in solid contact with the tape, but not touching any other parts of the mechanism.
2. It is recommended that measurements should be repeated at least three (3) times because the tension meter is very sensitive to external vibrations.

#### 7.2.2.2. TAPE INTERCHANGEABILITY ADJUSTMENT

**Note:**

To perform these adjustment/confirmation procedures, set the tracking to the neutral position.

**Equipment Required:**

**Dual Trace Oscilloscope**



**VHS Alignment Tape (VFMS0003H6)**

**Post Adjustment Driver (VFK0329)**

**H-Position Adjustment Driver (VFK0330)**

**7.2.2.2.1. ENVELOPE OUTPUT ADJUSTMENT**

The height of the P2 and P3 Posts replacement part is preadjust at the factory.

**Purpose:**

To achieve a satisfactory picture and secure precise tracking.

**Symptom of Misadjustment:**

If the envelope is output poorly, much noise will appear in the picture. Then the tracking will lose precision and the playback picture will be distorted by any slight variation of the tracking control circuit.

**Equipment Required:**

**Post Adjustment Driver (VFK0329)**

1. Place a jumper between TP6003 and +5 V(TP6009) on the TV/VCR Main C.B.A. to defeat Auto Tracking.
2. Eject the tape and insert it again to access the Neutral Tracking position.
3. Play back the alignment tape.
4. Connect the oscilloscope to TP3002 on the Video Signal Process Section of the TV/VCR Main C.B.A. Use TP6205 as a trigger.
5. Confirm that the RF envelope is flat enough (V1/V-max. is 0.7 or more). If not, with Post Adjustment Driver, adjust P2 and P3 post height so that the envelope waveform becomes as flat (V1/V-max. is 0.7 or more) as possible (Noenvelope drop). If the envelope drop appears on the left-half of the waveform, adjust P2 post height. If the envelope drop appears on the right-half of the waveform, adjust P3 post height.

**CAUTION:**

Overtightening P2 and P3 posts may cause the threads to strip.

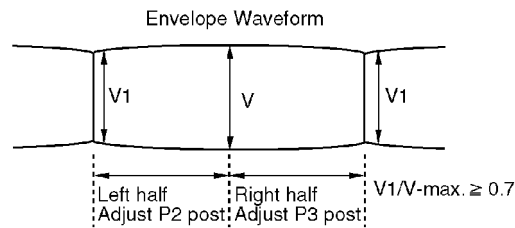
**Note:**

It will be possible to confirm Step 5 according to following steps.

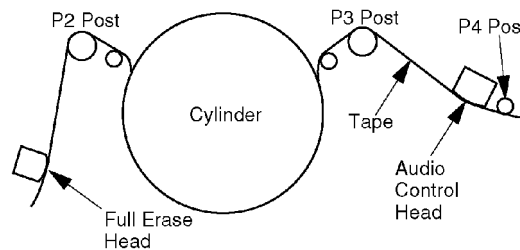
1. Press the Tracking Control Up or Down button on remote control. Make sure that the envelope waveform remains flat. If not, readjust P2 and/or P3 post heights.



**Fig. M3-1**

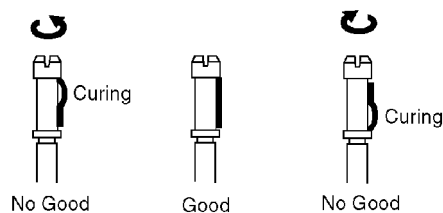


**Fig. M3-2**



6. After adjustment, confirm that the tape travels without curling at P2 and P3 posts.

**Fig. M3-3**



7. Remove the jumper after completing the adjustment procedure.

#### 7.2.2.2.2. AUDIO CONTROL HEAD TILT ADJUSTMENT

##### Purpose:

To confirm that the tape runs smoothly. In particular, confirm that the tape properly picks up the Audio Signal at the upper part of the head and the Control Signal at the lower part of the head.

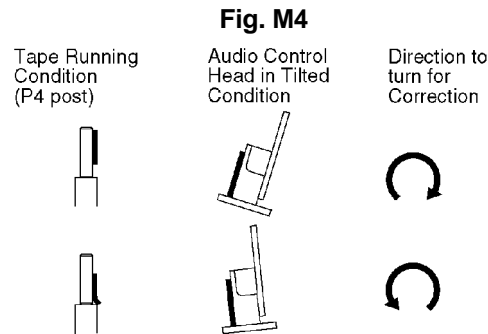
##### Symptom of Misadjustment:

If the tilt of the Audio Control Head is poorly adjusted, the tape will eventually be damaged. An intermittent Blue screen may be seen in Playback.

1. Play back a T120 cassette tape and check that the tape travels smoothly between the upper and lower guides of the P4 post.
2. If necessary, adjust Black Screw (B) clockwise until the tape begins to curl at the lower edge of the P4 post. Then adjust the



**screw counterclockwise until the curling is eliminated.**



#### 7.2.2.2.3. AUDIO CONTROL HEAD HEIGHT ADJUSTMENT

The height of the Audio Control Head replacement part is preset at the factory.

##### **Purpose:**

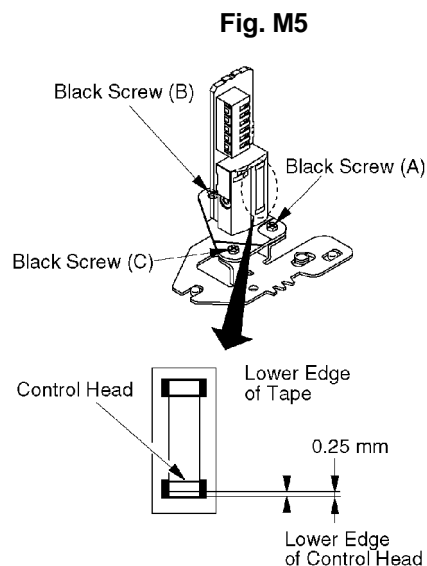
**To be sure the tape runs properly along the Control Head.**

##### **Symptom of Misadjustment:**

**If the control signal is not properly picked up, Servo Operation cannot be achieved. A Blue screen will be seen in Playback.**

This confirmation is required when the Audio Control Head is replaced.

- 1. Play back a T120 cassette tape and check that the lower edge of the tape runs approximately 0.25 mm above the lower edge of the Audio Control Head.**
- 2. If necessary, adjust Black Screws (A) and (B) clockwise to lower the tape or counterclockwise to raise.**



#### 7.2.2.2.4. AUDIO CONTROL HEAD AZIMUTH ADJUSTMENT

##### **Purpose:**

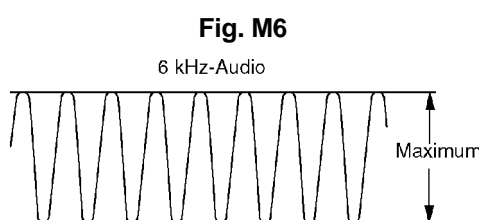


To adjust the position and height of the Audio Control Head so that it meets the tape tracks properly.

**Symptom of Misadjustment:**

If the position of the Audio Control Head is not properly adjusted, the Audio S/N Ratio is poor.

1. Connect the oscilloscope to the TP4002 on the TV/VCR Main C.B.A.
2. Play back the 6 kHz Monaural Audio portion of the alignment tape.
3. Adjust Black Screw (C) on the Audio Control Head base so that the output level is at maximum.



4. Confirm the height of the Audio Control Head is proper. If not, readjust Black Screws (A) and (B).

**7.2.2.2.5. AUDIO CONTROL HEAD HORIZONTAL POSITION ADJUSTMENT**

**Purpose:**

To adjust the Horizontal Position of the Audio Control Head.

**Symptom of Misadjustment:**

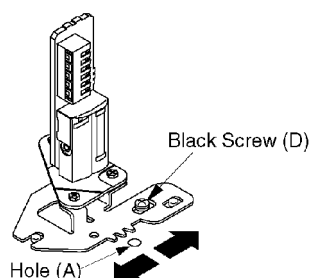
If the Horizontal Position of the Audio Control Head is not properly adjusted, a maximum envelope cannot be obtained at the Neutral Position of the Tracking Control Circuit.

1. Place a jumper between TP6003 and +5 V(TP6009) on the TV/VCR Main C.B.A. to defeat Auto Tracking.
2. Eject the tape and insert it again to access the Neutral Tracking position.
3. Play back the alignment tape.
4. Connect the oscilloscope to TP3002 on the Video Signal Process Section of the TV/VCR Main C.B.A. Use TP6205 as a trigger.
5. Loosen the Black Screw (D) and tighten it slightly. Set the H-Position Adjustment Driver into the Hole (A). Then slowly turn the fixture either clockwise or counterclockwise so that the envelope



is at maximum.

Fig. M7



6. Tighten Black Screw (D).

7. Remove the jumper between TP6003 and +5 V(TP6009).

**Note:**

Old type of H-Position Adjustment Driver (VFK0136) can be used for this adjustment.

### 7.3. ELECTRICAL ADJUSTMENT

#### 7.3.1. TEST EQUIPMENT

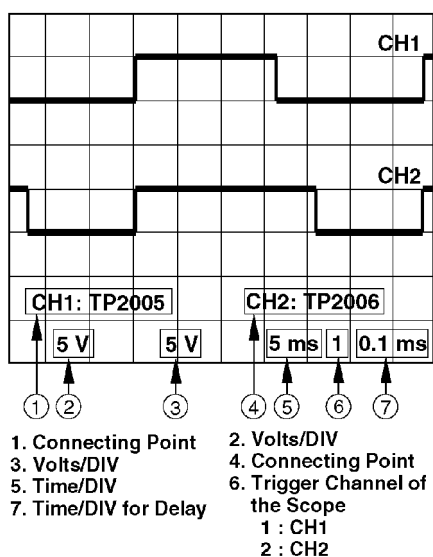
To do all of these electrical adjustments, the following equipment is required.

1. Dual-Trace Oscilloscope  
Voltage Range: 0.001 V to 50 V/Div.  
Frequency Range: DC to 50 MHz  
Probes: 10:1, 1:1
2. NTSC Video Pattern Generator
3. DVM (Digital Volt Meter)
4. MTS/SAP Signal Generator  
(TV Multi-Channel Sound Modulator (U.S.A.))
5. Frequency Counter  
Frequency Range: 0 to 150 MHz
6. Plastic Tip Driver and Non-Metal Driver
7. Isolation Transformer (Variable)
8. VHS Alignment Tape (VFMS0003H6)
9. Degaussing Coil
10. White Pattern Generator
11. Audio Generator



### 7.3.2. HOW TO READ THE ADJUSTMENT PROCEDURES

Fig.E1



### 7.3.3. STEREO/SAP SEPARATION ADJUSTMENT (FOR MODEL WITH TV STEREO)

#### Purpose:

To separate the L and R Channels of Stereo Signal.

#### Symptom of Misadjustment:

The L and R Channels of Stereo Signal will not be separated properly resulting in no stereophonic effect.

#### Test Point :

TP9001 (TV/VCR Main C.B.A.)

#### Adjustment :

R9001, R9008 (TV/VCR Main C.B.A.)

#### Specification :

minimum level

#### INPUT :

Antenna Input Terminal  
MTS (ONLY L CH)  
300 Hz $\pm$ 5 Hz, 3 kHz $\pm$ 5 Hz  
14 % or 7 % Modulating

#### Mode :

STEREO audio (TV)

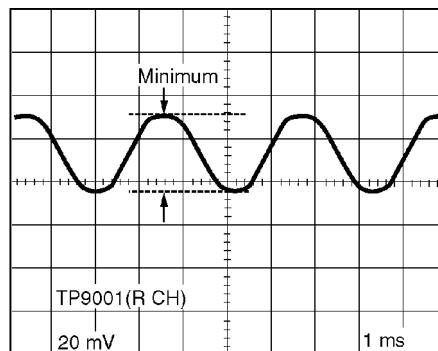
#### Equipment :



Oscilloscope,  
MTS/SAP Signal Generator

1. Set to TV mode, and then set to STEREO audio.
2. Connect the RF OUTPUT of the MTS/SAP Signal Generator to the Antenna Input Terminal.  
Then, set the MTS/SAP Signal Generator as follows.  
MTS (ONLY L CH)  
300 Hz $\pm$ 5 Hz  
14 % or 7 % Modulating
3. Connect the Oscilloscope to TP9001 on the TV/VCR Main C.B.A.
4. Adjust R9001 (SEP (L) ) on the TV/VCR Main C.B.A. so that the signal level of TP9001 is minimum.
5. Set the MTS/SAP Signal Generator as follows.  
MTS (ONLY L CH)  
3 kHz $\pm$ 5 Hz  
14 % or 7 % Modulating
6. Adjust R9008 (SEP (H) ) on the TV/VCR Main C.B.A. so that the signal level of TP9001 is minimum.

Fig.E2



#### 7.3.4. FM VCO ADJUSTMENT (FOR MODEL WITH FM RADIO AND TV STEREO)

**Purpose:**

To set VCO free run frequency.

**Symptom of Misadjustment:**

Even when stereophony is received, only monaural sound will be output.

**Test Point :**



**C9203(-), TP9201 (TV/VCR Main C.B.A.)**

**Adjustment :**

**R9206 (TV/VCR Main C.B.A.)**

**Specification :**

**38.0 kHz $\pm$ 50 Hz**

**INPUT :**

-----

**Mode :**

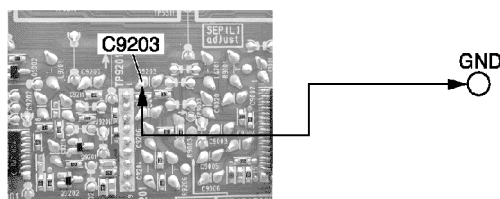
**STEREO audio (FM Radio)**

**Equipment :**

**Frequency Counter**

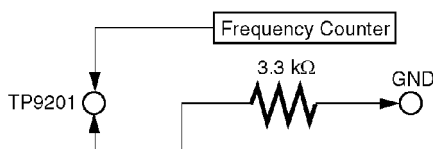
**1. Connect C9203(-) on the TV/VCR Main C.B.A. to GND.**

**Fig. E3-1**



**2. Connect TP9201 on the TV/VCR Main C.B.A. to GND through a resistor (3.3 kW). Then, connect Frequency Counter to TP9201.**

**Fig. E3-2**



**3. Adjust R9206 (FM VCO) so that the frequency is 38.0 kHz $\pm$  50 Hz.**

### **7.3.5. EVR (Electronic Variable Register) ADJUSTMENT WITH THE REMOTE CONTROL**

This unit has electronic technology using I2C Bus concept. The following control functions are adjusted by using "On Screen Displays" and the remote control instead of adjusting mechanical controls (VR).



**Memory IC Reference Table**

Control functions	Address *1	Range	Default
SUB COLOR	00	C0 - FF, 00 - 3F	00
SUB TINT	01	E0 - FF, 00 - 1F	00
SUB BRIGHT	02	C0 - FF, 00 - 3F	DE
CONTRAST	03	C1 - FF, 00	00
SUB SHARPNESS	04	E0 - FF, 00 - 1F	F0
R CUT -OFF	05	00 - 7F	1E
G CUT -OFF	06	00 - FD	3C
B CUT -OFF	07	00 - FD	3C
G DRIVE	08	00 - 7F	40
B DRIVE	09	00 - 7F	40
SUB CONTRAST	0A	00 - 0F	06
H-CENTER	0B	00 - 0F	08
V SIZE	0D	00 - 7F	40
V POSITION *2	0E	00 - 7F	03
PG SHIFTER	15	01 - FD	80

**Note:**

- \*1. Address is not displayed on the TV screen.  
Other Addresses except above are not used.
- \*2. For Model with 20 inch CRT, V POSITION are not required in EVR adjustment.

#### 7.3.5.1. EVR ADJUSTMENT ITEM

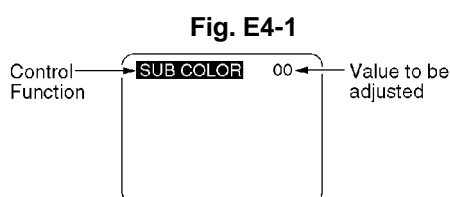
The following Items need to be adjusted for EVR adjustment.

- PG SHIFTER ADJUSTMENT
- SUB CONTRAST ADJUSTMENT
- FOCUS, SCREEN, CUT OFF, DRIVE ADJUSTMENT
- SUB COLOR/SUB TINT ADJUSTMENT
- V. HEIGHT/H. POSITION ADJUSTMENT
- WHITE BALANCE ADJUSTMENT
- SUB BRIGHTNESS ADJUSTMENT

#### 7.3.5.2. How to enter EVR adjustment mode

Press and hold STOP, PLAY, and VOL- buttons on the unit together over 5 seconds with no cassette inserted.

The adjustment overlay will appear.



##### 7.3.5.2.1. How to adjust:

1. Press CH UP/DOWN key on the remote control to select control function to be adjusted.

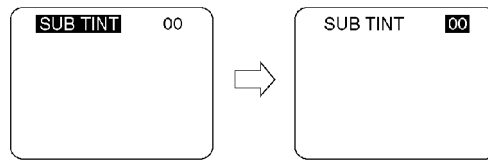
**Important Note:**

Make a note of the original value of the controls before modifying in case the wrong control is adjusted.

2. Press VOL +/- key on the remote control so that the shaded area moves to the value.

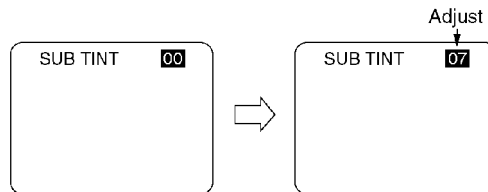


Fig. E4-2



3. Press CH UP/DOWN key on the remote control to adjust the value of the selected control.

Fig. E4-3

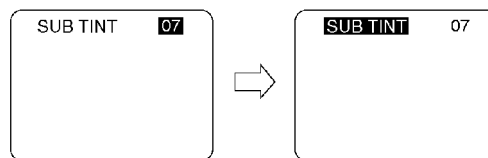


**Note:**

You can select a desired channel by using the numbered keys on the remote control in EVR adjustment mode.

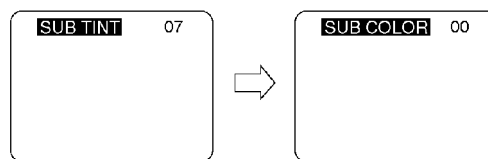
4. Press VOL +/- key on the remote control so that the shaded area moves to the control function.

Fig. E4-4



5. Press CH UP/DOWN key on the remote control to select a control function for the next adjustment if necessary.

Fig. E4-5



**7.3.5.2.2. How to release from EVR Adjustment Mode:**

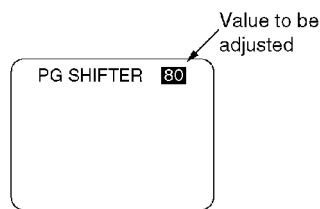
Press and hold STOP, PLAY, and VOL- buttons on the unit together over 5 seconds again or press the POWER button OFF to release EVR adjustment mode. The adjusted value will be written to Memory IC (IC6004).

**7.3.5.3. HOW TO ENTER EVR PG SHIFTER ADJUSTMENT MODE**

1. Enter EVR adjustment mode.
2. Insert the VHS Alignment Tape and playback in SP mode.  
The adjustment overlay will appear.

Fig. E4-6

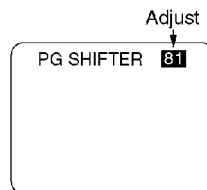




#### 7.3.5.3.1. How to adjust:

Press CH UP/DOWN key on the remote control to adjust the value.

Fig. E4-7



#### 7.3.5.3.2. How to release from EVR PG Shifter Adjustment Mode:

Press STOP button or press the POWER button OFF.

The adjusted value will be written to Memory IC (IC6004).

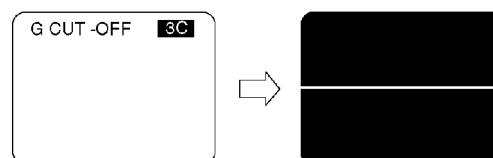
#### 7.3.5.4. HOW TO ENTER SERVICE MODE

1. Enter EVR adjustment mode.
2. Press DISPLAY key on the remote control for collapse scan.

#### Note:

Before pressing DISPLAY key on the remote control for collapse scan, select the desired control function and move the shaded area to the value for adjustments you will proceed.

Fig. E4-8



#### 7.3.5.4.1. How to release from Service Mode:

Press DISPLAY key again on the remote control.

### 7.3.6. PG SHIFTER ADJUSTMENT

#### Purpose:

Determine the Video Head Switching Point during Playback.

#### Symptom of Misadjustment:

May cause Head Switching Noise and/or Vertical Jitter.

#### Test Point :

TP3001 (TV/VCR Main C.B.A.),

TP6205 (TV/VCR Main C.B.A.)



**Adjustment :**

**PG SHIFTER (EVR)**

**Specification :**

**$T = 6 H \pm 1 H$  (0.38 ms  $\pm$  0.06 ms)**

**INPUT :**

-----

**Mode :**

**SP Playback**

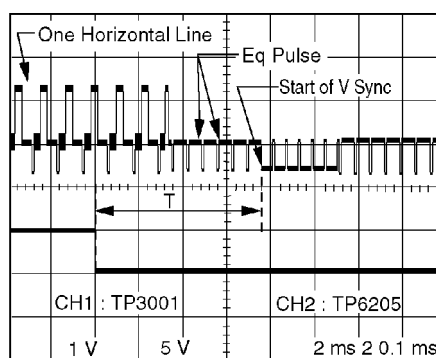
**Equipment :**

**Oscilloscope,**

**VHS Alignment Tape (VFMS0003H6)**

1. Enter EVR PG Shifter Adjustment mode, refer to "**HOW TO ENTER EVR PG SHIFTER ADJUSTMENT MODE.**"
2. Connect the channel-1 scope probe to TP3001 and the channel-2 scope probe to TP6205. Used TP6205 as a trigger.
3. Adjust value so that the trailing edge of the head switching pulse is placed  $6 H \pm 1 H$  (0.38 ms  $\pm$  0.06 ms) before the start of the vertical sync pulse.
4. Release EVR PG Shifter Adjustment Mode.  
The adjusted value will be written to Memory IC (IC6004).

**Fig. E5**



### **7.3.7. SUB CONTRAST ADJUSTMENT**

**Purpose:**

**To set the optimum sub contrast level.**

**Symptom of Misadjustment:**



The picture is too dark or too light.

**Test Point :**

Pin 5 of P6001 (TV/VCR Main C.B.A.) or TP49 (CRT C.B.A.)

**Adjustment :**

**SUB CONTRAST (EVR)**

**Specification :**

**3.0 V[p-p]±0.1 V[p-p]**

**INPUT :**

Video Input Jack,  
Crosshatch Pattern Signal 1 V[p-p]  
(75  $\Omega$  terminated)

**Mode :**

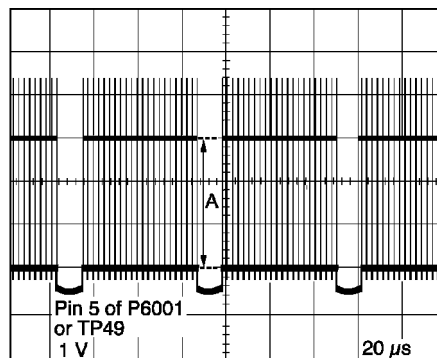
**STOP**

**Equipment :**

Oscilloscope,  
NTSC Video Pattern Generator

1. Supply a Crosshatch Pattern Signal to the Video Input Jack.
2. Connect the Oscilloscope to Pin 5 of P6001 on the TV/VCR Main C.B.A. or TP49 on the CRT C.B.A.
3. Select SUB BRIGHT in EVR adjustment mode. Then, after making a note of the original value, adjust to the (D0).
4. Select SUB CONTRAST in EVR adjustment mode and adjust so that the level A is 3.0 V[p-p]±0.1 V[p-p].
5. Select SUB BRIGHT in EVR adjustment mode and reset to the original value.

**Fig. E6**





### **7.3.8. FOCUS, SCREEN, CUT OFF, DRIVE ADJUSTMENT**

**Purpose:**

To set the optimum Focus and Screen.

**Symptom of Misadjustment:**

The picture is out of Focus and there will be an improper screen color mix.

**Test Point :**

TP50 (CRT C.B.A.)

**Adjustment :**

FOCUS CONTROL (Flyback Transformer),  
SCREEN CONTROL (Flyback Transformer),  
SUB BRIGHT (EVR),  
B DRIVE (EVR),  
G DRIVE (EVR),  
B CUT -OFF (EVR),  
G CUT -OFF (EVR),  
R CUT -OFF (EVR)

**Specification :**

Refer to descriptions below.

**INPUT :**

Video Input Jack,  
Monoscope Pattern Signal

**Mode :**

STOP

**Equipment :**

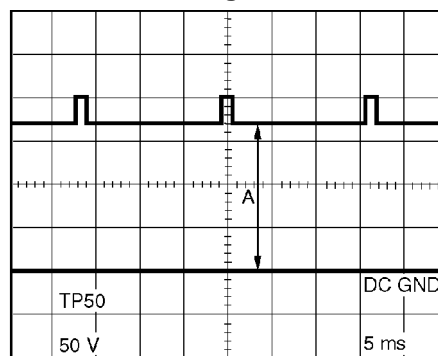
Oscilloscope,  
NTSC Video Pattern Generator

1. Supply a Monoscope Pattern Signal to the Video Input Jack.
2. Connect the Oscilloscope to TP50 on the CRT C.B.A.  
(Use TP47 for GND.)
3. Select SUB BRIGHT and move the shaded area to the value in EVR adjustment mode.
4. Adjust the FOCUS CONTROL on the Flyback Transformer so that



- the center of picture is the sharpest.
5. Turn the SCREEN CONTROL on the Flyback Transformer fully counterclockwise.
  6. Press DISPLAY key on the remote control for collapse scan. (Refer to **HOW TO ENTER SERVICE MODE.**)
  7. Adjust SUB BRIGHT in EVR adjustment mode so that the level A is (140 VDC $\pm$ 5 VDC: For model with 13 inch CRT) or (170 VDC $\pm$ 5 VDC: For model with 20 inch CRT) or (185 VDC $\pm$ 5 VDC: For model with 25 inch CRT).

Fig. E7



8. Turn the SCREEN CONTROL on the Flyback Transformer clockwise carefully and stop at the point where any color is first observed.
9. In EVR adjustment mode, select the two colors not observed in step 8 from the following control functions (B CUT -OFF, G CUT -OFF, or R CUT -OFF) and adjust so that the horizontal line becomes white.  
For example, if the horizontal line appeared red in step 8, select and adjust the B CUT -OFF and G CUT -OFF.  
(See NOTE)
10. Press DISPLAY key on the remote control again to return for full frame scan.
11. Select SUB BRIGHT in EVR adjustment mode and adjust so that the picture has adequate brightness.
12. Select G DRIVE and B DRIVE in EVR adjustment mode and adjust so that the entire screen is white.

**Note:**



Before pressing DISPLAY key on the remote control for collapse scan, select the desired control function and move the shaded area to the value.

#### **7.3.9. SUB COLOR/SUB TINT ADJUSTMENT**

**Purpose:**

To set the standard color phase.

**Symptom of Misadjustment:**

Color phase will be shifted.

**Test Point :**

Pin 5 of P6001 (TV/VCR Main C.B.A.) or TP49 (CRT C.B.A.)

**Adjustment :**

SUB COLOR (EVR), SUB TINT (EVR)

**Specification :**

$C = 1.40 \text{ V[p-p]} \pm 0.15 \text{ V[p-p]}$

(For model with 13 inch CRT)

$C = 1.50 \text{ V[p-p]} \pm 0.15 \text{ V[p-p]}$

(For model with 20/25 inch CRT)

**INPUT :**

Video Input Jack,  
Rainbow Color Bar

**Mode :**

STOP

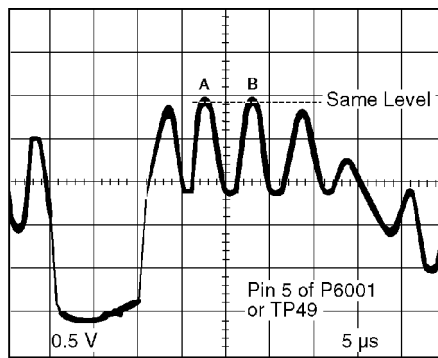
**Equipment :**

Oscilloscope,  
NTSC Video Pattern Generator

1. Supply the Rainbow Color Bar signal to Video Input Jack.
2. Select SUB BRIGHT in EVR adjustment mode. Then, after making a note of the original value, adjust to the minimum (C0).
3. Connect the Oscilloscope to Pin 5 of P6001 on the TV/VCR Main C.B.A. or TP49 on the CRT C.B.A.
4. Select SUB TINT in EVR adjustment mode and adjust so that level A and B should be equal in amplitude.

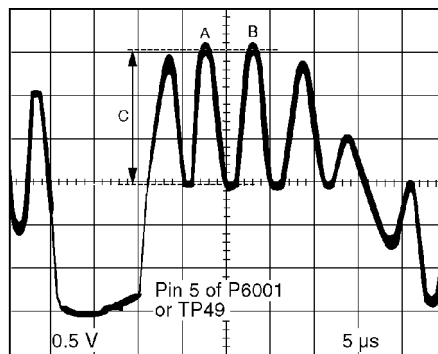
Fig. E8-1





5. Select SUB COLOR in EVR adjustment mode and adjust so that the level C is (1.40 V[p-p]±0.15 V[p-p]: For model with 13 inch CRT) or (1.50 V[p-p]±0.15 V[p-p]: For model with 20/25 inch CRT).

Fig. E8-2



6. (For model with SAMSUNG CRTs)  
Select SUB TINT in EVR adjustment mode and lower level B 2 clicks below the same level.  
(For model with others CRTs)  
Select SUB TINT in EVR adjustment mode and increase level B 1 click above the same level.
7. Select SUB BRIGHT in EVR adjustment mode and reset to the original value.

### 7.3.10. V. HEIGHT/H. POSITION ADJUSTMENT

#### Purpose:

To set the standard vertical and horizontal picture size.

#### Symptom of Misadjustment:

The picture size is on the vertical and horizontal axis is abnormal.

#### Test Point :

-----



**Adjustment :**

**V SIZE (EVR),  
H CENTER (EVR),  
V POSITION (EVR)  
(For model with 13 inch CRT)**

**Specification :**

**Refer to descriptions below.**

**INPUT :**

**Video Input Jack,  
Monoscope Pattern Signal**

**Mode :**

**STOP**

**Equipment :**

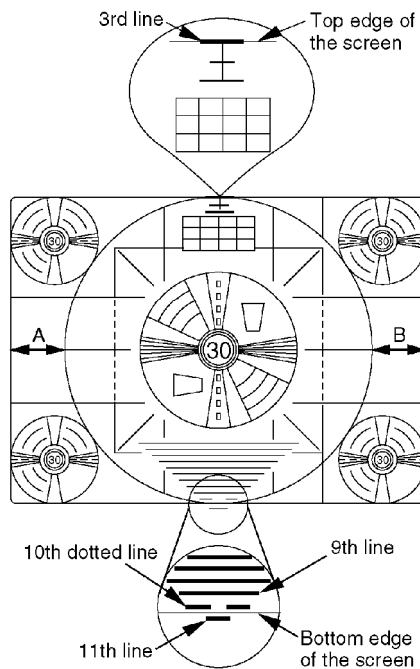
**NTSC Video Pattern Generator**

**(For model with 13/25 inch CRT)**

- 1. Supply a Monoscope Pattern Signal to the Video Input Jack.**
- 2. Select H CENTER in EVR adjustment mode and adjust so that width A is approximately equal to width B.**
- 3. Select V SIZE in EVR adjustment mode and adjust so that the top 3rd line is just in view.**
- 4. Confirm that the 10th dotted line is in view and that the 11th line is out of view.**  
**If the line are not positioned correctly, select V POSITION in adjustment mode and adjust correctly.**

**Fig. E9-1**



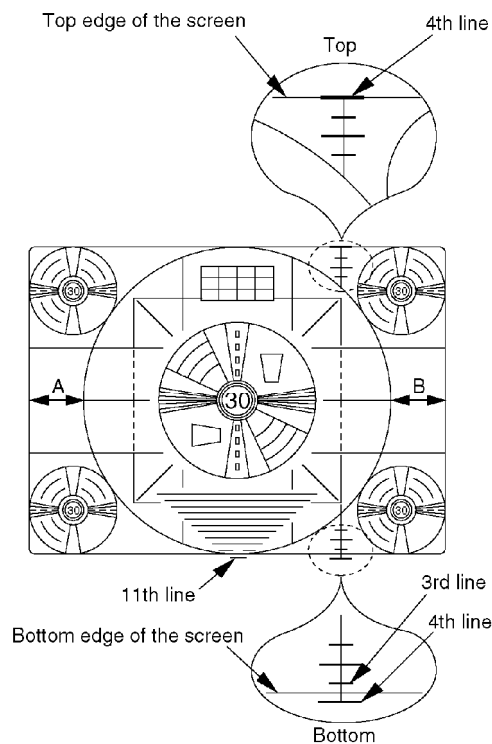


(For model with 20 inch CRT)

1. Supply a Monoscope Pattern Signal to the Video Input Jack.
2. Select H-CENTER in EVR adjustment mode and adjust so that A is approximately equal to width B.
3. Select V SIZE in EVR adjustment mode and adjust so that the top 4th line is just in view.
4. Confirm that the bottom 3rd line is in view and that the bottom 4th line is out of view.

Fig. E9-2





### 7.3.11. WHITE BALANCE ADJUSTMENT

#### Purpose:

To set the standard white level for each color temperature.

#### Symptom of Misadjustment:

White becomes bluish or reddish.

#### Test Point :

TP50 (CRT C.B.A)

#### Adjustment :

**FOCUS CONTROL (Flyback Transformer),**  
**SCREEN CONTROL (Flyback Transformer),**  
**SUB BRIGHT (EVR),**  
**G DRIVE (EVR),**  
**B DRIVE (EVR),**  
**R CUT -OFF (EVR),**  
**G CUT -OFF (EVR),**  
**B CUT -OFF (EVR)**

#### Specification :

Refer to descriptions below.



**INPUT :**

Video Input Jack,  
Monoscope Pattern Signal,  
White Pattern Signal

**Mode :**

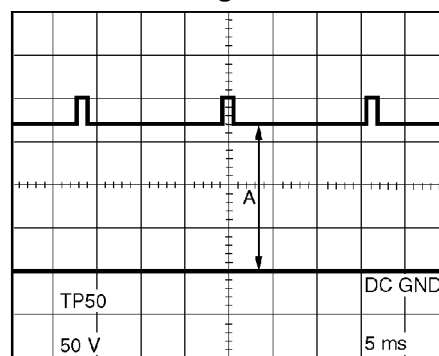
**STOP**

**Equipment :**

NTSC Video Pattern Generator,  
White Pattern Generator,  
Oscilloscope

1. Supply a Monoscope Pattern Signal to the Video Input Jack.
2. Connect the Oscilloscope to TP50 on the CRT C.B.A.  
(Use TP47 for GND.)
3. Select SUB BRIGHT and move the shaded area to the value in EVR adjustment mode.
4. Adjust the FOCUS CONTROL on the Flyback Transformer so that the center of picture is the sharpest.
5. Turn the SCREEN CONTROL on Flyback Transformer fully counterclockwise.
6. Press DISPLAY key on the remote control for collapse scan. (Refer to **HOW TO ENTER SERVICE MODE.**)
7. Adjust SUB BRIGHT in EVR adjustment mode so that the level A is (140 VDC $\pm$ 5 VDC: For model with 13 inch CRT) or (170 VDC $\pm$ 5 VDC: For model with 20 inch CRT) or (185 VDC $\pm$ 5 VDC: For model with 25 inch CRT).

**Fig. E10**





8. Turn the **SCREEN CONTROL** on the Flyback Transformer clockwise carefully and stop at the point where any color is first observed.
9. In EVR adjustment mode, select the two colors not observed in step 8 from the following control functions (**B CUT -OFF**, **G CUT -OFF**, or **R CUT -OFF**) and adjust so that the horizontal line becomes white.  
For example, if the horizontal line appeared red in step 8, select and adjust the **B CUT -OFF** and **G CUT -OFF**.  
(See NOTE)
10. Supply a White Pattern Signal to the Video Input Jack.
11. Press **DISPLAY** key on the remote control again to return for full frame scan.
12. Select **G DRIVE** and **B DRIVE** in EVR adjustment mode and adjust so that the entire screen is white.
13. Select **SUB BRIGHT** in EVR adjustment mode. Then, after making a note of the original value, adjust to the minimum (**C0**) and while turning **SUB BRIGHT** value from minimum (**C0**) up to maximum (**3F**), confirm that the screen is tracking the White Pattern properly. Repeat the above steps 5, 9, 11, and 12 until the screen is properly tracking the White Pattern.

**Note:**

Before pressing **DISPLAY** key on the remote control for collapse scan, select the desired control function and move the shaded area to the value.

### **7.3.12. SUB BRIGHTNESS ADJUSTMENT**

**Purpose:**

To set the optimum brightness level.

**Symptom of Misadjustment:**

The picture is too white or too black.

**Test Point :**

-----

**Adjustment :**



## **SUB BRIGHT (EVR)**

### **Specification :**

**Refer to descriptions below.**

### **INPUT :**

-----

### **Mode :**

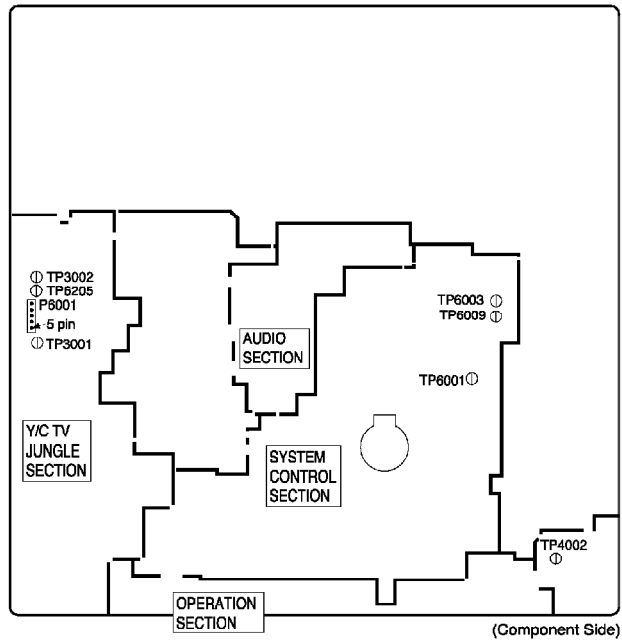
**STOP**

- 1. Do not input any signal to the unit.**
- 2. Set INPUT SELECT item to LINE in SET UP TV menu to display black screen.**
- 3. Select SUB BRIGHT in EVR adjustment mode, and adjust so that the black screen starts to turn gray (lighting only).**

## **7.4. TEST POINTS AND CONTROL LOCATION**



### TV/VCR Main C.B.A. (For model with 13/20 inch CRT)



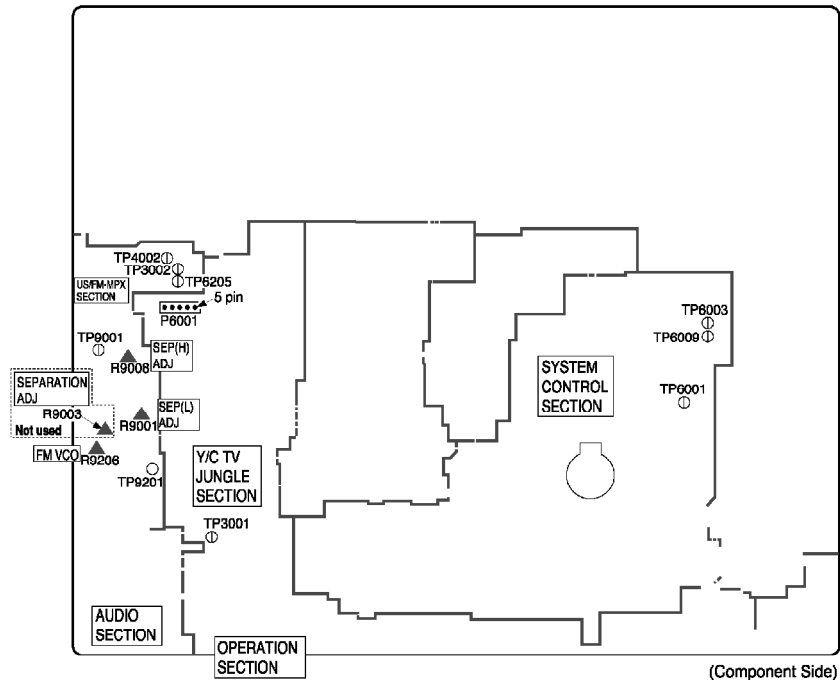
FUNCTION OF IMPORTANT TEST POINTS	
TP3001	Video Signal
TP3002	REC/PB Video envelope signal
TP4002	Normal Audio signal
TP6001	Service Test Point (inhibit sensors)
TP6003	Defeat Auto tracking function (connect to +5V(TP6009))
TP6009	+5V
TP6205	Head SW.

#### Test Point Information

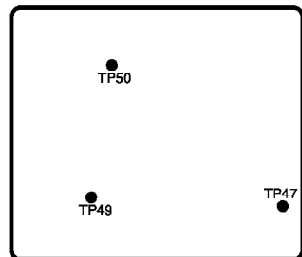
- Test Point with a Test Pin.
- ⊕ Test Point with a jumper wire across a hole in the P.C.B.
- Test Point with no Test Pin.



**TV/VCR Main C.B.A. (For model with 25 Inch CRT)**

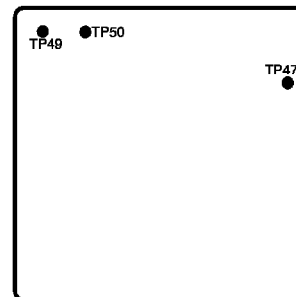


**CRT C.B.A. (For model with 13 inch CRT)**



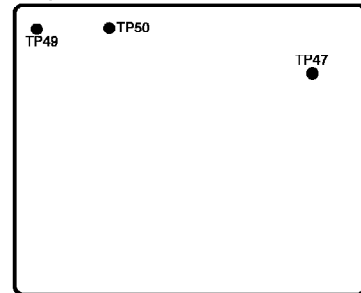
(Foil Side)

**CRT C.B.A. (For model with 20 inch CRT)**



(Foil Side)

**CRT C.B.A. (For model with 25 inch CRT)**



(Foil Side)

## 8. SCHEMATIC DIAGRAMS

### 8.1. SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES

### 8.2. TV/VCR MAIN SCHEMATIC DIAGRAM (Models: PVQ-1322W/PV-C1322-K/PV-C1352W-K/PVQ-2012/VV-2002/PV-C2022-K)

### 8.3. TV/VCR MAIN SCHEMATIC DIAGRAM (Models: PVQ-2512/PV-



**C2542)**

**8.4. HEAD AMP SCHEMATIC DIAGRAM (Models: PVQ-1322W/PV-C1322-K/PVQ-2012/VV-2002/PV-C2022-K/PVQ-2512)**

**8.5. HEAD AMP SCHEMATIC DIAGRAM (Models: PV-C1352W-K/PV-C2542)**

**8.6. CRT SCHEMATIC DIAGRAM (Models: PVQ-1312W/PV-C1322-K/PV-C1352W-K)**

**8.7. CRT SCHEMATIC DIAGRAM (Models: PVQ-2012/VV-2002/PV-C2022-K)**

**8.8. CRT SCHEMATIC DIAGRAM (Models: PVQ-2512/PV-C2542)**

**8.9. INTERCONNECTION SCHEMATIC DIAGRAM**

**8.10. SIGNAL WAVEFORMS**

## **9. CIRCUIT BOARD LAYOUT**

**9.1. TV/VCR MAIN C.B.A. (Models: PVQ-1322W/PV-C1322-K/PV-C1352W-K/PVQ-2012/VV-2002/PV-C2022-K)**

**9.2. TV/VCR MAIN C.B.A. (Models: PVQ-2512/PV-C2542)**

**9.3. HEAD AMP C.B.A. (Models: PVQ-1322W/PV-C1322-K/PVQ-2012/VV-2002/PV-C2022-K/PVQ-2512)**

**9.4. HEAD AMP C.B.A. (Models: PV-C1352W-K/PV-C2542)**

**9.5. CRT C.B.A. (Models: PVQ-1312W/PV-C1322-K/PV-C1352W-K)**

**9.6. CRT C.B.A. (Models: PVQ-2012/VV-2002/PV-C2022-K)**

**9.7. CRT C.B.A. (Models: PVQ-2512/PV-C2542)**

## **10. BLOCK DIAGRAMS**

## **11. EXPLODED VIEWS**

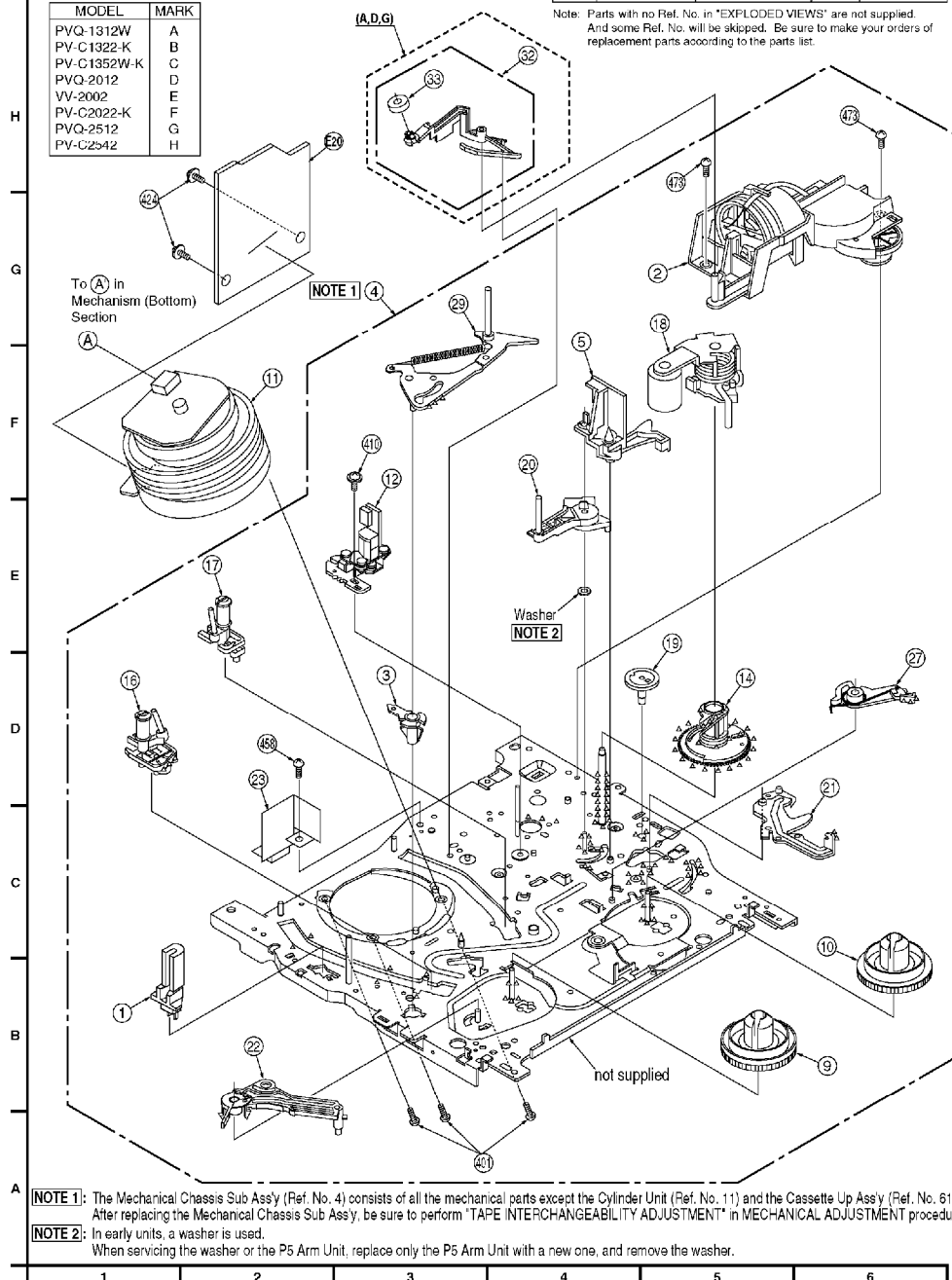
**11.1. MECHANISM (TOP) SECTION**



## 1 MECHANISM (TOP) SECTION

COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H



### LUBRICATION POINTS

When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
△△△	Grease	Available from Factory	VFKS0081

Note: Parts with no Ref. No. in "EXPLODED VIEWS" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.

## 11.2. MECHANISM (BOTTOM) SECTION

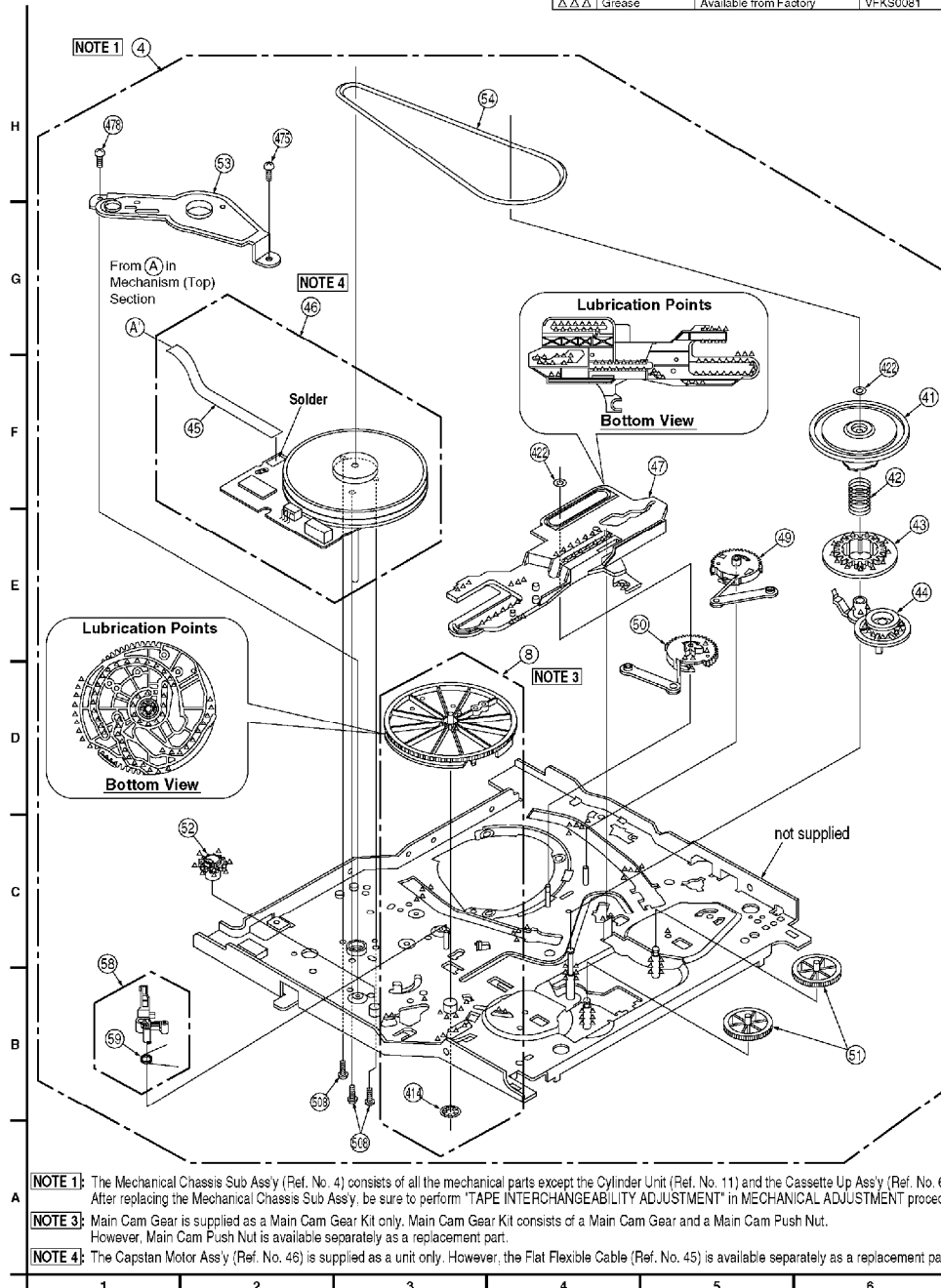


## ② MECHANISM (BOTTOM) SECTION

### LUBRICATION POINTS

When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
△△△	Grease	Available from Factory	VFKS0081



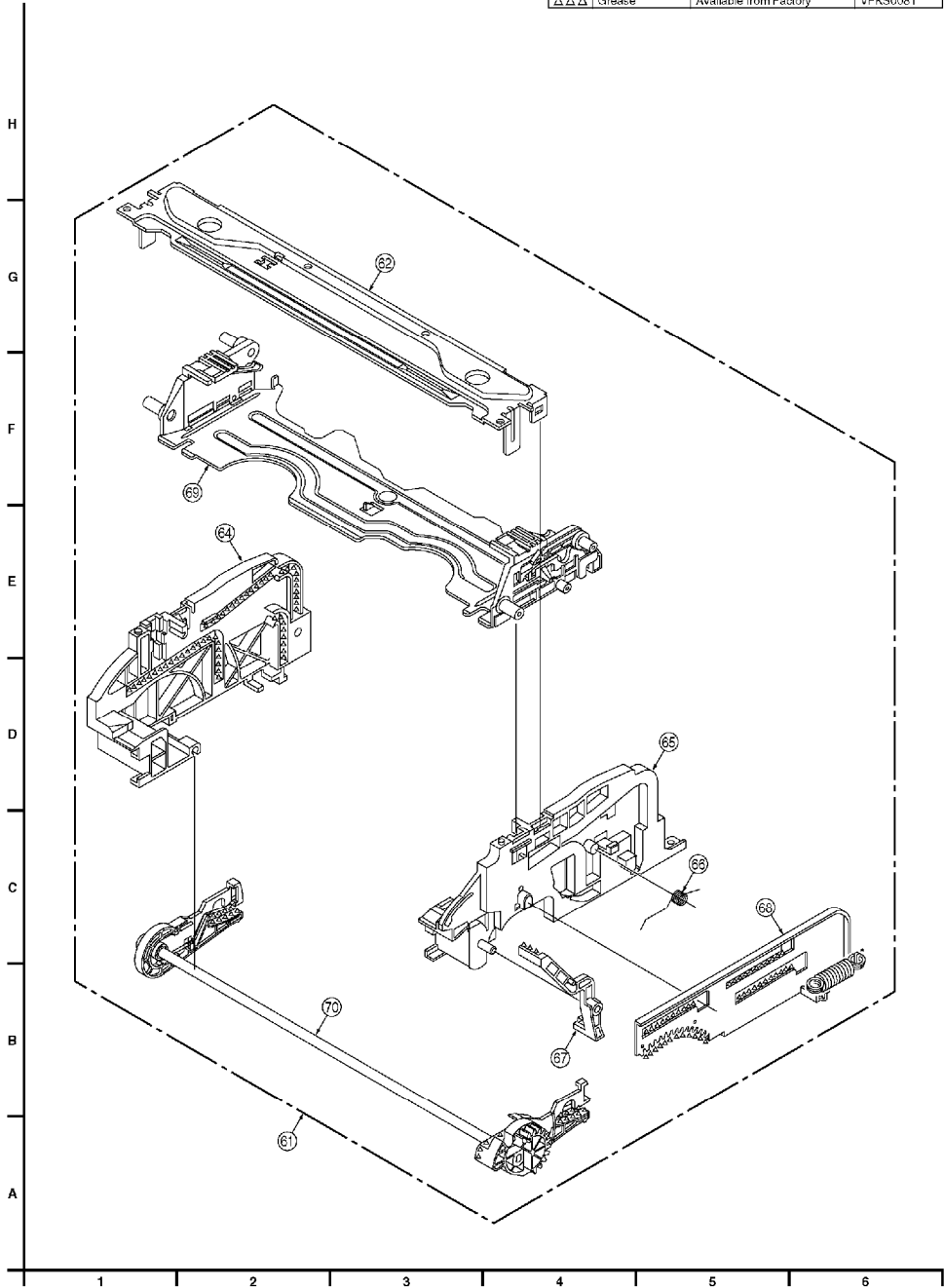
## 11.3. CASSETTE UP COMPARTMENT SECTION



### ③ CASSETTE UP COMPARTMENT SECTION

LUBRICATION POINTS  
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
△△△	Grease	Available from Factory	VFKS0081



### 11.4. CHASSIS FRAME SECTION (1)




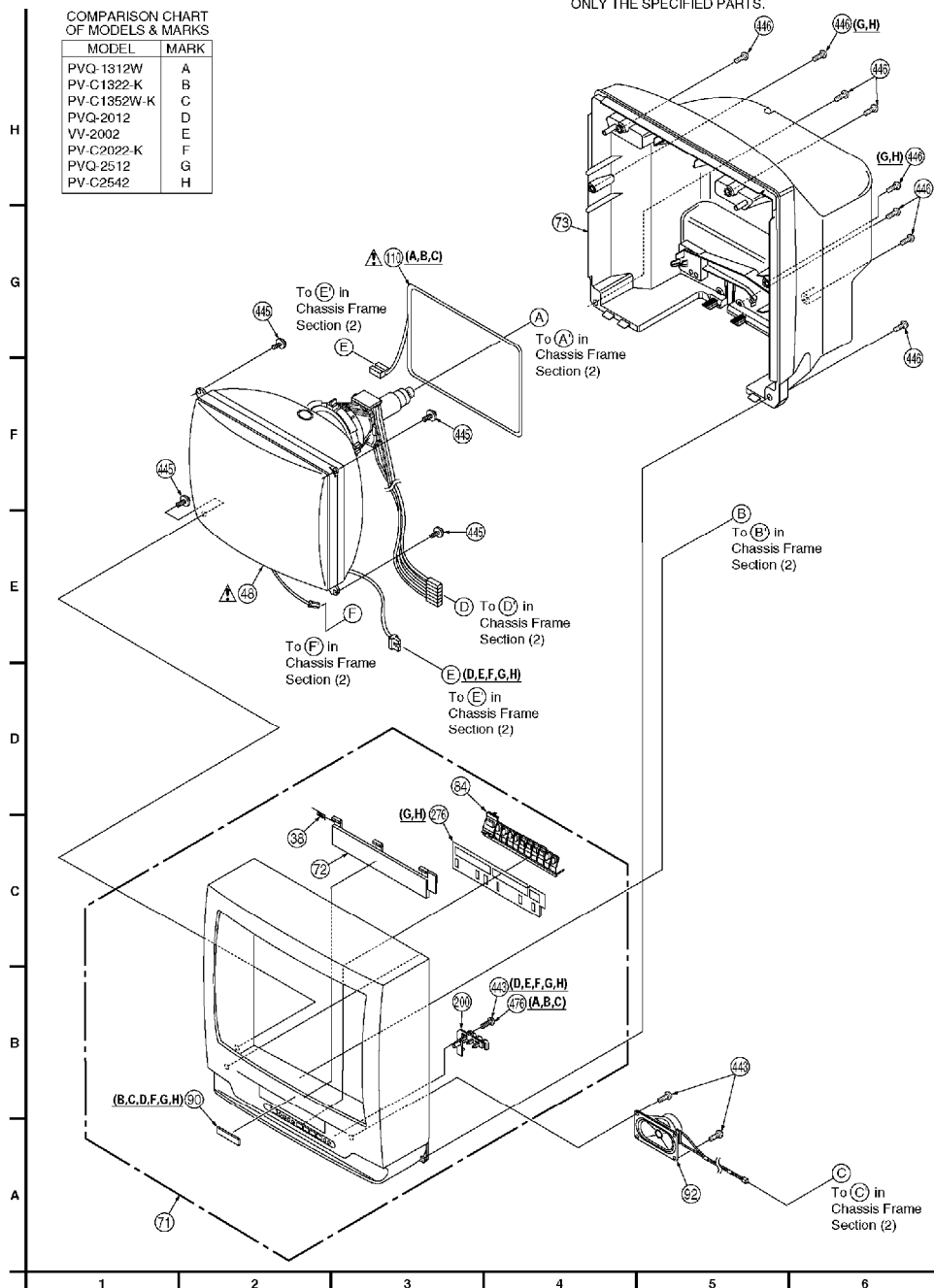
#### 4 CHASSIS FRAME SECTION (1)

COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H

#### IMPORTANT SAFETY NOTICE

COMPONENTS IDENTIFIED BY THE SIGN  HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.




#### 11.5. CHASSIS FRAME SECTION (2)



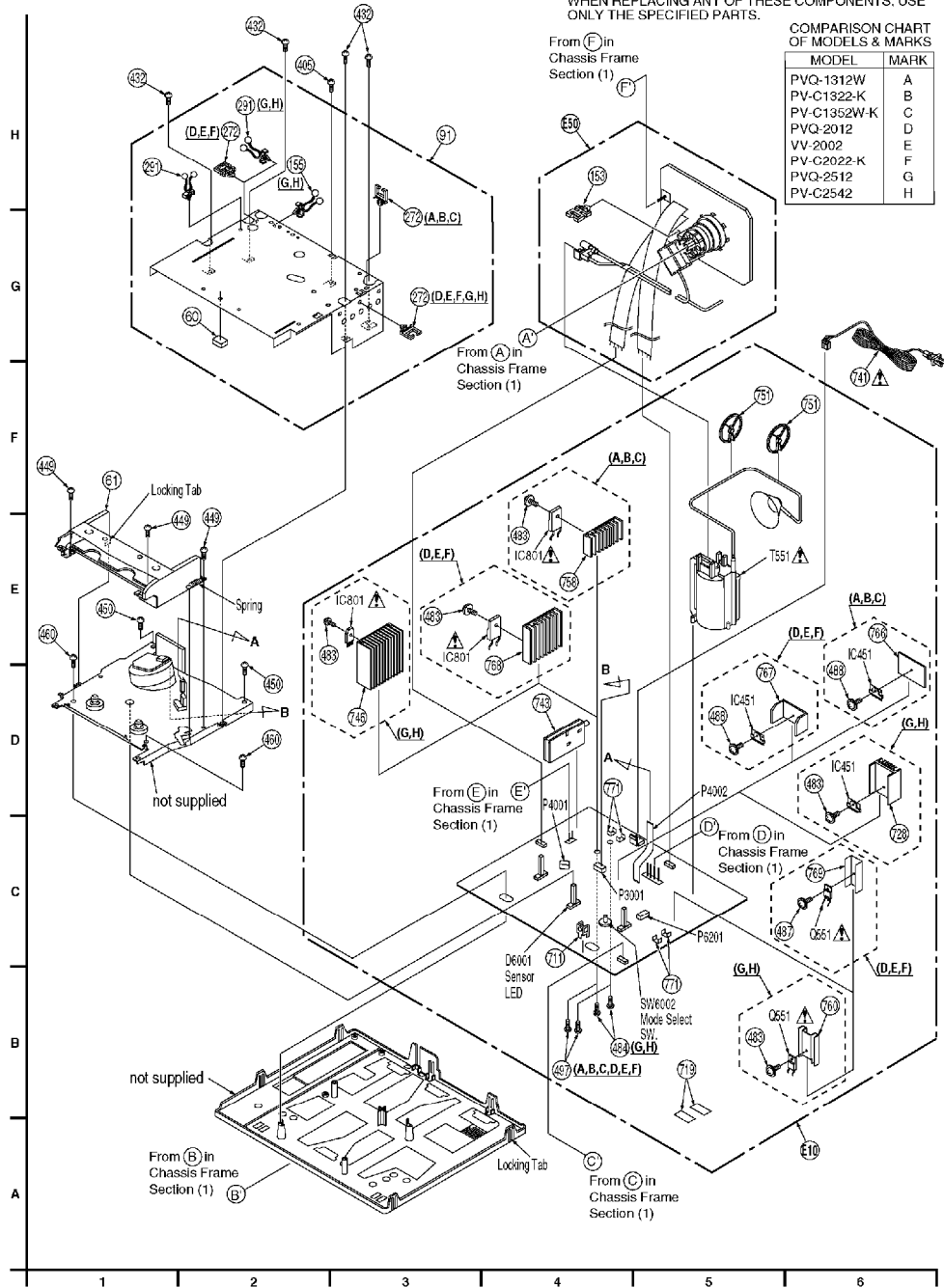
## 5 CHASSIS FRAME SECTION (2)

### IMPORTANT SAFETY NOTICE

COMPONENTS IDENTIFIED BY THE SIGN  HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

### COMPARISON CHART OF MODELS & MARKS

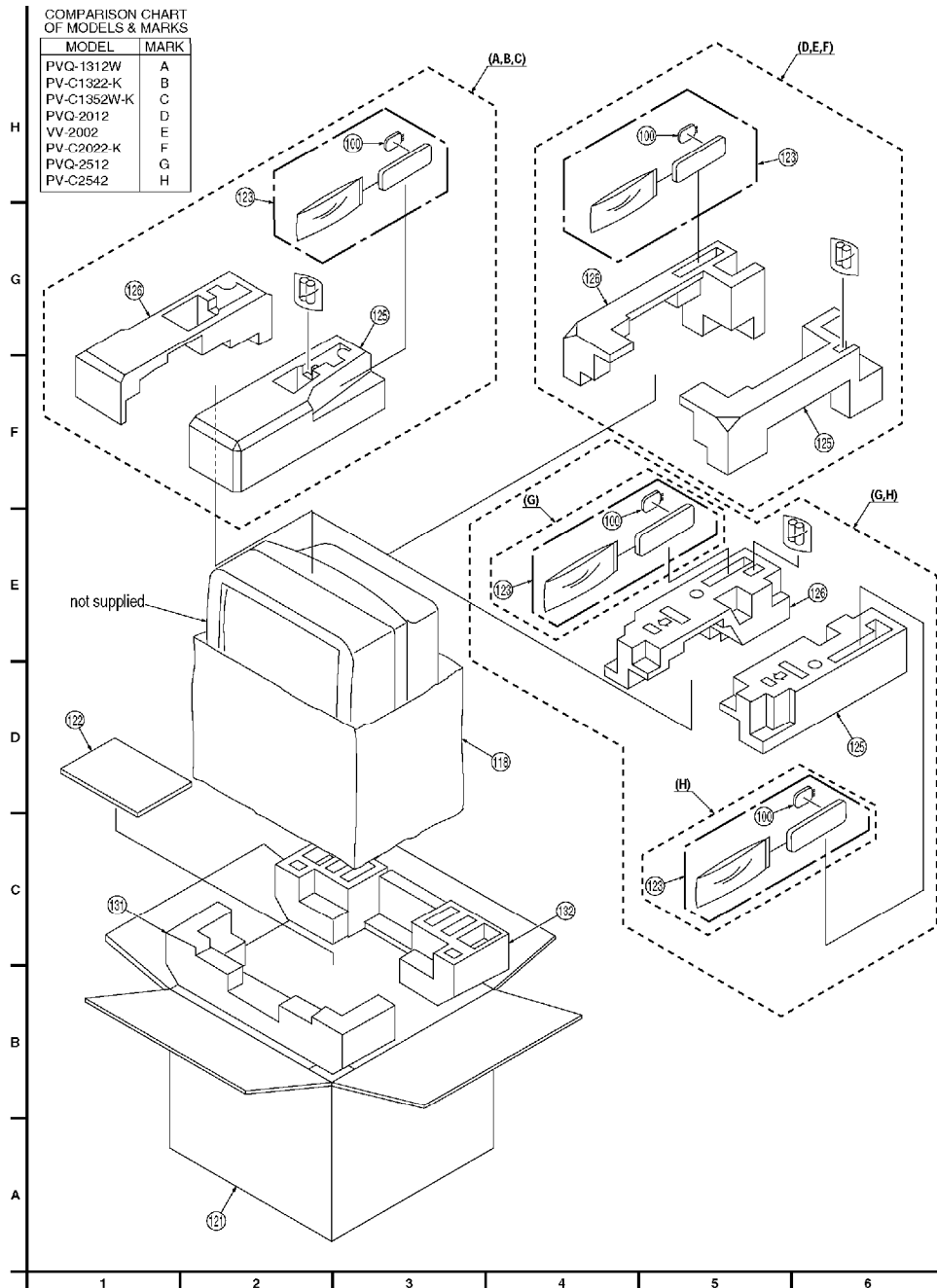
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H



## 11.6. PACKING PARTS AND ACCESSORIES SECTION



## 6 PACKING PARTS AND ACCESSORIES SECTION



## 12. REPLACEMENT PARTS LISTS

BEFORE REPLACING PARTS, READ THE FOLLOWING:

### 12.1. REPLACEMENT NOTES

#### 12.1.1. General Notes

#### 1. Use only original replacement parts:

To maintain original function and reliability of repaired units, use



only original replacement parts which are listed with their part numbers in the parts list.

## **2. IMPORTANT SAFETY NOTICE**

Components identified by the sign  have special characteristics important for safety. When replacing any of these components, use only the specified parts.

## **3. SPECIAL NOTE**

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.

4. Parts with no Ref. No. in "EXPLODED VIEWS" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.
5. Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.
6. All of parts are supplied from MKA.
7. Item numbers with capital letter E (Example: E10, E20,...) in the Ref. No. column are shown in the exploded views.
8. Parts whose Ref. Nos. are the same are interchangeable as replacement parts. Any of these parts may be ordered and used as a replacement part.

### **12.1.2. Mechanical Replacement Notes**

1. Section No. of parts shown in Exploded Views are indicated in the Remarks column.
2. The Mechanical Chassis Sub Ass'y (Ref. No. 4) consists of all the mechanical parts except the Cylinder Unit (Ref. No. 11) and the Cassette Up Ass'y (Ref. No. 61).  
After replacing the Mechanical Chassis Sub Ass'y, be sure to perform "TAPE INTERCHANGEABILITY ADJUSTMENT" in MECHANICAL ADJUSTMENT procedures.
3. In early units, a washer is used.



When servicing the washer or the P5 Arm Unit, replace only the P5 Arm Unit with a new one, and remove the washer.

4. Main Cam Gear is supplied as a Main Cam Gear Kit (Ref. No. 8) only. Main Cam Gear Kit consists of a Main Cam Gear and a Main Cam Push Nut. However, Main Cam Push Nut is available separately as a replacement part.
5. The Capstan Motor Ass'y (Ref. No. 46) is supplied as a unit only. However, the Flat Flexible Cable (Ref. No. 45) is available separately as a replacement part.
6. The Infrared Remote Control Unit (Ref. No. 123) replacement part is available as a complete assembly unit only. Do not try to disassemble the Infrared Remote Control Unit. However, the battery cover is available separately as a replacement part.
7. Main Cam Push Nut (Ref. No. 414) is not reusable. If removed, install a new one.

### 12.1.3. Electrical Replacement Notes

1. Unless otherwise specified;

All resistors are in  $\Omega$  , K = 1,000  $\Omega$  , M = 1,000 k  $\Omega$  .

2. Abbreviation

**RTL:**

Retention Time Limited

This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.

**NR:**

Non Repairable Board Ass'y

**MGF CHIP:**

Metal Glaze Film Chip

**C CHIP:**

Ceramic Chip

**COMPLX CMP:**

Complex Component

**W FLMPRF:**



**Wirewound Flameproof**

**C.B.A.:**

**Circuit Board Assembly**

**P.C.B.:**

**Printed Circuit Board**

**E.S.D.:**

**Electrostatically Sensitive Devices**

3. When replacing 0  $\Omega$  resistor, a wire can be substituted for it.
4. Since the UHF/VHF TUNER/TV DEMODULATOR UNIT (Ref. No. 743) has already been pre-adjusted at the factory, do not try to adjust the UHF/VHF TUNER/TV DEMODULATOR UNIT. The UHF/VHF TUNER/TV DEMODULATOR UNIT replacement part is available as a complete assembly unit only.
5. EEP ROM IC (IC6004), TV/VCR MAIN C.B.A. replacement note:  
After replacing EEP ROM IC (IC6004) or TV/VCR MAIN C.B.A., be sure to write the initial data with remote control. / Refer to “HOW TO INITIALIZE MEMORY IC” in SERVICE NOTES.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PVQ-1312W	A	VV-2002	E
PV-C1322-K	B	PV-C2022-K	F
PV-C1352W-K	C	PVQ-2512	G
PVQ-2012	D	PV-C2542	H






## 12.2. MECHANICAL REPLACEMENT PARTS

COMPARISON CHART OF MODELS & MARKS


MODEL	MARK	MODEL	MARK
PVQ-1312W	A	VV-2002	E
PV-C1322-K	B	PV-C2022-K	F
PV-C1352W-K	C	PVQ-2512	G
PVQ-2012	D	PV-C2542	H

### MECHANICAL REPLACEMENT PARTS



Ref. No.	Part No.	Part Name & Description	Remarks
<u>1</u>	VBSS0033	FULL ERASE HEAD	1
<u>2</u>	LSXK0094	MOTOR BLOCK UNIT	1
<u>3</u>	LSDB0045	TENSION ARM BOSS	1
<u>4</u>	LSXY0281	MECHANICAL CHASSIS SUB ASS'Y	1,2
<u>5</u>	LSMD0209	OPENER PIECE	1
<u>8</u>	VVGS0009	MAIN CAM GEAR KIT	2
<u>9</u>	LSDR0004	S REEL TABLE	1
<u>10</u>	LSDR0005	T REEL TABLE	1
<u>11</u>	LSEG0028	CYLINDER UNIT ( A,B,D,E,F,G )	1
11	LSEG0029	CYLINDER UNIT ( C,H )	1
<u>12</u>	VEHS0587	AUDIO CONTROL/ERASE HEAD UNIT	1
<u>14</u>	LSDG0112	LIFT GEAR	1
<u>16</u>	VXDS0213	LOADING POST BASE-S UNIT	1
<u>17</u>	VXDS0214	LOADING POST BASE-T UNIT	1
<u>18</u>	LSXL0079	PINCH ARM UNIT	1
<u>19</u>	LSDG0110	INTERMEDIATE GEAR A	1
<u>20</u>	LSXL0078	P5 ARM UNIT	1
<u>21</u>	LSML0131	DRIVE RACK ARM	1
<u>22</u>	LSXL0077	TENSION CONTROL ARM UNIT	1
<u>23</u>	LSSC0518	A/C SHIELD PLATE	1
<u>27</u>	VXLS1130	T BRAKE UNIT	1
<u>29</u>	VXLS1129	TENSION ARM UNIT	1
<u>32</u>	VXLS1104	CLEANER ARM UNIT ( A,D,G )	1
<u>33</u>	VDPS0269	CLEANER ROLLER ( A,D,G )	1
<u>38</u>	LSMB0221	CASSETTE DOOR SPRING ( A,B,C,G,H )	4
38	LSMB0230	CASSETTE DOOR SPRING ( D,E,F )	4
<u>41</u>	VXPS0389	CENTER CLUTCH UNIT	2
<u>42</u>	VMBS1151	CHANGING GEAR SPRING	2
<u>43</u>	LSDG0114	CHANGING GEAR	2
<u>44</u>	VXLS1091	IDLER ARM UNIT	2
<u>45</u>	LSJW0027	FLAT FLEXIBLE CABLE W/OUT PLUG, 12V DC	2
<u>46</u>	LSEM0056	CAPSTAN MOTOR ASS'Y	2
<u>47</u>	LSMM0003	MAIN ROD	2
<u>48</u>	LXQVB02131	COLOR PICTURE TUBE UNIT ( A )	4 
48	LXQVB01131	COLOR PICTURE TUBE UNIT ( B,C )	4 
48	LXQVB02202	COLOR PICTURE TUBE UNIT ( D,E )	4 
48	LXQVB01202	COLOR PICTURE TUBE UNIT ( F )	4 
48	LXQVB01250	COLOR PICTURE TUBE UNIT ( G,H )	4 
<u>49</u>	VXLS1099	S LOADING ARM UNIT	2
<u>50</u>	VXLS1098	T LOADING ARM UNIT	2
<u>51</u>	LSDG0116	REEL GEAR	2
<u>52</u>	LSDG0111	INTERMEDIATE GEAR B	2
<u>53</u>	LSMA0532	SUPPORT ANGLE	2
<u>54</u>	LSDV0009	CAPSTAN BELT SQUARE, ELASTOMER 2MM	2
<u>58</u>	LSXL0081	SS BRAKE ARM UNIT	2
<u>59</u>	LSMB0196	SS BRAKE SPRING	2
<u>60</u>	VMFS0311	CUSHION	5
<u>61</u>	VXYS1347	CASSETTE UP ASS'Y	3,5
<u>62</u>	LSMA0352	TOP PLATE	3
<u>64</u>	LSMD0174	SIDE PLATE L	3
<u>65</u>	LSMD0173	SIDE PLATE R	3
<u>66</u>	LSMB0218	SUPPORT SPRING	3



Ref. No.	Part No.	Part Name & Description	Remarks
<a href="#">67</a>	LSML0096	OPENER LEVER	3
<a href="#">68</a>	VXLS1111	DRIVE RACK UNIT	3
<a href="#">69</a>	VXAS4423	HOLDER UNIT	3
<a href="#">70</a>	VXLS1110	WIPER ARM UNIT	3
<a href="#">71</a>	LXQKY01132	FRONT CABINET ASS'Y ( A )	4
71	LXQKY02132	FRONT CABINET ASS'Y ( B )	4
71	LXQKY05132	FRONT CABINET ASS'Y ( C )	4
71	LXQKY01202	FRONT CABINET ASS'Y ( D )	4
71	LXQKY05202	FRONT CABINET ASS'Y ( E )	4
71	LXQKY02202	FRONT CABINET ASS'Y ( F )	4
71	LXQKY01252	FRONT CABINET ASS'Y ( G )	4
71	LXQKY02252	FRONT CABINET ASS'Y ( H )	4
<a href="#">72</a>	LSKF0439	CASSETTE DOOR-LID ( A )	4
72	LSKF0440	CASSETTE DOOR-LID ( B )	4
72	LSKF0443	CASSETTE DOOR-LID ( C )	4
72	LSKF0445	CASSETTE DOOR-LID ( D )	4
72	LSKF0444	CASSETTE DOOR-LID ( E )	4
72	LSKF0446	CASSETTE DOOR-LID ( F )	4
72	LSKF0449	CASSETTE DOOR-LID ( G )	4
72	LSKF0457	CASSETTE DOOR-LID ( H )	4
<a href="#">73</a>	LKV60602B	REAR COVER ( A )	4
73	LXQKV08139	REAR COVER UNIT ( B )	4
73	LXQKV09139	REAR COVER UNIT ( C )	4
73	LSGV0029	REAR COVER ( D,E )	4
73	LXQKV01202	REAR COVER UNIT ( F )	4
73	LKV60801D	REAR COVER ( G,H )	4
<a href="#">84</a>	LBX61076B	OPERATION BUTTON ( A )	4
84	LBY61044B	OPERATION BUTTON ( B,D,F )	4
84	LBX61072B	OPERATION BUTTON ( C )	4
84	LBX61074B	OPERATION BUTTON ( E )	4
84	LBX61070B	OPERATION BUTTON ( G,H )	4
<a href="#">90</a>	TBM153023	BADGE,ABS RESIN ( B,C )	4
90	TBM153022	BADGE,ABS RESIN ( D,F )	4
90	TBM173052	BADGE,ABS RESIN ( G,H )	4
<a href="#">91</a>	LXQUS01131K	TOP SHIELD PLATE ASS'Y ( A,B,C )	5
91	LXQUS01202K	TOP SHIELD PLATE ASS'Y ( D,E,F )	5
91	LXQUS01252K	TOP SHIELD PLATE ASS'Y ( G,H )	5
<a href="#">92</a>	LXQAS01J13	SPEAKER UNIT	4
<a href="#">100</a>	LSKF0392	BATTERY COVER ( A )	6
100	LSKF0361	BATTERY COVER ( B )	6
100	LSKF0362	BATTERY COVER ( C )	6
<a href="#">100</a>	LSKF0360	BATTERY COVER ( D,G )	6
<a href="#">100</a>	LSKF0363	BATTERY COVER ( E )	6
<a href="#">100</a>	VKFS2235	BATTERY COVER ( F,H )	6
<a href="#">110</a>	LLJ69006Z	DEGAUSSING COIL ( A,B,C )	4 
<a href="#">118</a>	LPE64003A	BAG,POLYETHYLENE ( A,B,C )	6
118	LPE64004A	BAG,POLYETHYLENE ( D,E,F )	6
118	LPE64005A	BAG,POLYETHYLENE ( G,H )	6
<a href="#">121</a>	LSPG1237	PACKING CASE,PAPER ( A )	6
121	LSPG1277	PACKING CASE,PAPER ( B )	6
121	LSPG1278	PACKING CASE,PAPER ( C )	6
121	LSPG1243	PACKING CASE,PAPER ( D )	6
121	LSPG1242	PACKING CASE,PAPER ( E )	6
121	LSPG1279	PACKING CASE,PAPER ( F )	6













Ref. No.	Part No.	Part Name & Description	Remarks
121	LSPG1247	PACKING CASE,PAPER ( G )	6
121	LSPG1248	PACKING CASE,PAPER ( H )	6
122	LSQT0515A	INSTRUCTION BOOK ( A,D,G )	6
122	LSQT0554A	INSTRUCTION BOOK ( B,C )	6
122	LSQT0519A	INSTRUCTION BOOK ( E )	6
122	LSQT0555A	INSTRUCTION BOOK ( F )	6
122	LSQT0582A	INSTRUCTION BOOK ( H )	6
123	LSSQ0308	INFRARED REMOTE CONTROL UNIT ( A )	6
123	LSSQ0281	INFRARED REMOTE CONTROL UNIT ( B )	6
123	LSSQ0282	INFRARED REMOTE CONTROL UNIT ( C )	6
123	LSSQ0280	INFRARED REMOTE CONTROL UNIT ( D,G )	6
123	LSSQ0283	INFRARED REMOTE CONTROL UNIT ( E )	6
123	LSSQ0278	INFRARED REMOTE CONTROL UNIT ( F )	6
123	LSSQ0341	INFRARED REMOTE CONTROL UNIT ( H )	6
125	LPJ61029A	TOP CUSHION RIGHT,STYROFOAM ( A,B,C )	6
125	LPJ61028A	TOP CUSHION RIGHT,STYROFOAM ( D,E,F )	6
125	LPJ61034A	TOP CUSHION RIGHT,STYROFOAM ( G,H )	6
126	LPJ61030A	TOP CUSHION LEFT,STYROFOAM ( A,B,C )	6
126	LPJ61027A	TOP CUSHION LEFT,STYROFOAM ( D,E,F )	6
126	LPJ61033A	TOP CUSHION LEFT,STYROFOAM ( G,H )	6
131	LPJ62029A	BOTTOM CUSHION FRONT,STYROFOAM ( A,B,C )	6
131	LPJ62027A	BOTTOM CUSHION FRONT,STYROFOAM ( D,E,F )	6
131	LPJ62033A	BOTTOM CUSHION FRONT,STYROFOAM ( G,H )	6
132	LPJ62030A	BOTTOM CUSHION REAR,STYROFOAM ( A,B,C )	6
132	LPJ62028A	BOTTOM CUSHION REAR,STYROFOAM ( D,E,F )	6
132	LPJ62034A	BOTTOM CUSHION REAR,STYROFOAM ( G,H )	6
153	TMM7443-1	CLAMPER	5
155	TMM76403-1	CLAMPER ( G,H )	5
200	LKK683011A	PANEL LIGHT ( A )	4
200	LKK683010A	PANEL LIGHT ( B,C )	4
200	LKK683009A	PANEL LIGHT ( D,F,G,H )	4
200	LKK683013A	PANEL LIGHT ( E )	4
272	TMM77412	CLAMPER	5
276	LSMF0046	SHEET ( G,H )	4
291	LML69002A	CLAMPER	5
401	VHDS0475	SCREW,STEEL	1
405	VHDS0496	SCREW W/WASHER,STEEL	5
410	VHDS0498	SCREW W/WASHER,STEEL	1
414	VHNS0070	MAIN CAM PUSH NUT,STEEL	2
422	XWGV2D5G	WASHER,NYLON	2
424	XYC26+SF6J	SCREW W/WASHER,STEEL	1
432	XTV3+8JR	TAPPING SCREW,STEEL	5
443	XTV4+12A	TAPPING SCREW,STEEL	4
445	THE492-4	SCREW W/WASHER,STEEL ( A,B,C )	4
445	LHT60002Y	SCREW W/WASHER,STEEL ( D,E,F )	4
445	LHT60001Y	SCREW W/WASHER,STEEL ( G,H )	4
446	XTV4+16A	TAPPING SCREW,STEEL	4
449	VHDS0493	TAPPING SCREW,STEEL	5
450	VHDS0309	SCREW,STEEL	5
458	XTV3+8J	TAPPING SCREW,STEEL	1
460	XTN4+12A	TAPPING SCREW,STEEL	5
473	XYN26+C6	SCREW W/WASHER,STEEL	1
475	XTV26+5FJ	TAPPING SCREW,STEEL	2
476	XTV3+12G	TAPPING SCREW,STEEL ( A,B,C )	4



Ref. No.	Part No.	Part Name & Description	Remarks
<a href="#">478</a>	VHDS0495	SCREW,STEEL	2
<a href="#">483</a>	XYN3+F10S	SCREW W/WASHER,STEEL	5
<a href="#">484</a>	XTW3+10J	TAPPING SCREW,STEEL ( G,H )	5
<a href="#">487</a>	XYN3+J8	SCREW W/WASHER,STEEL ( D,E,F )	5
<a href="#">488</a>	XYN3+F6S	SCREW W/WASHER,STEEL ( A,B,C,D,E,F )	5
<a href="#">497</a>	XTV3+10J	TAPPING SCREW,STEEL ( A,B,C,D,E,F )	5
<a href="#">508</a>	XTB26+6J	TAPPING SCREW,STEEL	2
<a href="#">711</a>	PNA4611M00HC	INFRARED RECEIVER UNIT	5
<a href="#">719</a>	VMFS0136	SHEET,NYLON-RAYON	5
<a href="#">728</a>	LUS63008A	HEAT SINK ( G,H )	5
<a href="#">741</a>	LSJA0363	AC CORD W/PLUG,120V ( A,C )	5 
741	LSJA0344	AC CORD W/PLUG,120V ( A,C )	5 
741	LSJA0365	AC CORD W/PLUG,120V ( A,C )	5 
741	LSJA0362	AC CORD W/PLUG,120V ( B,D,E,F,G,H )	5 
741	LSJA0343	AC CORD W/PLUG,120V ( B,D,E,F,G,H )	5 
741	LSJA0364	AC CORD W/PLUG,120V ( B,D,E,F,G,H )	5 
<a href="#">743</a>	ENG36706GD	TUNER,UHF/VHF NR ( A,D,E,G )	5
743	ENG36709GD	TUNER,UHF/VHF NR ( B,C,F,H )	5
<a href="#">746</a>	LUS63001A	HEAT SINK ( G,H )	5
<a href="#">751</a>	LML69001A	ANODE LEAD CLAMPER	5
<a href="#">758</a>	TUC77616	HEAT SINK ( A,B,C )	5
<a href="#">760</a>	TUC77628	HEAT SINK ( G,H )	5
<a href="#">766</a>	TUC76677-1	HEAT SINK ( A,B,C )	5
<a href="#">767</a>	TUC77626	HEAT SINK ( D,E,F )	5
<a href="#">768</a>	TUC77603-1	HEAT SINK ( D,E,F )	5
<a href="#">769</a>	LUS23005B	HEAT SINK ( D,E,F )	5
<a href="#">771</a>	EYF52BC	FUSE HOLDER	5
<a href="#">E10</a>	LSEP2012R	TV/VCR MAIN C.B.A. ( A )	5 RTL
E10	LSEP2012Q	TV/VCR MAIN C.B.A. ( B )	5 RTL
E10	LSEP2012P	TV/VCR MAIN C.B.A. ( C )	5 RTL
E10	LSEP2012B	TV/VCR MAIN C.B.A. ( D,E )	5 RTL
E10	LSEP2012A	TV/VCR MAIN C.B.A. ( F )	5 RTL
E10	LSEP2013A	TV/VCR MAIN C.B.A. ( G )	5 RTL
E10	LSEP2013D	TV/VCR MAIN C.B.A. ( H )	5 RTL
<a href="#">E20</a>	LSEP2008A	HEAD AMP C.B.A. ( A,B,D,E,F,G )	1 RTL
E20	LSEP2009A	HEAD AMP C.B.A. ( C,H )	1 RTL
<a href="#">E50</a>	LRP63004D	CRT C.B.A. ( A,B,C )	5 RTL
E50	LRP63022B	CRT C.B.A. ( D,E,F )	5 RTL
E50	LRP63005G	CRT C.B.A. ( G,H )	5 RTL

### SERVICE FIXTURES AND TOOLS

Ref. No.	Part No.	Part Name & Description	Remarks
	VFMS0003H6	VHS ALIGNMENT TAPE	
	VFKS0081	GREASE	
	VFK0329	POST ADJUSTMENT DRIVER	
	VFK27	HEAD CLEANING STICK	
	VFK0330	H-POSITION ADJUSTMENT DRIVER	

## 12.3. ELECTRICAL REPLACEMENT PARTS LIST



**COMPARISON CHART OF MODELS & MARKS**

MODEL	MARK	MODEL	MARK
PVQ-1312W	A	VV-2002	E
PV-C1322-K	B	PV-C2022-K	F
PV-C1352W-K	C	PVQ-2512	G
PVQ-2012	D	PV-C2542	H

**PRINTED CIRCUIT BOARD ASSEMBLY**

Ref. No.	Part No.	Part Name & Description	Remarks
E10	LSEP2012R	TV/VCR MAIN C.B.A. ( A )	E.S.D. RTL
E10	LSEP2012Q	TV/VCR MAIN C.B.A. ( B )	E.S.D. RTL
E10	LSEP2012P	TV/VCR MAIN C.B.A. ( C )	E.S.D. RTL
E10	LSEP2012B	TV/VCR MAIN C.B.A. ( D,E )	E.S.D. RTL
E10	LSEP2012A	TV/VCR MAIN C.B.A. ( F )	E.S.D. RTL
E10	LSEP2013A	TV/VCR MAIN C.B.A. ( G )	E.S.D. RTL
E10	LSEP2013D	TV/VCR MAIN C.B.A. ( H )	E.S.D. RTL
E20	LSEP2008A	HEAD AMP C.B.A. ( A,B,D,E,F,G )	RTL
E20	LSEP2009A	HEAD AMP C.B.A. ( C,H )	RTL
E50	LRP63004D	CRT C.B.A. ( A,B,C )	RTL
E50	LRP63022B	CRT C.B.A. ( D,E,F )	RTL
E50	LRP63005G	CRT C.B.A. ( G,H )	RTL

**12.3.1. TV/VCR MAIN C.B.A.**

( Model: A,B,C,D,E,F )

**COMPARISON CHART OF MODELS & MARKS**

MODEL	MARK	MODEL	MARK
PVQ-1312W	A	VV-2002	E
PV-C1322-K	B	PV-C2022-K	F
PV-C1352W-K	C	PVQ-2512	G
PVQ-2012	D	PV-C2542	H



**INTEGRATED CIRCUITS**





Ref. No.	Part No.	Part Name & Description	Remarks
IC451	C1AA00000024	IC, LINEAR	
IC501	0N3131-R.KT	IC, LINEAR	⚠
IC502	0N3131-R.KT	IC, LINEAR	⚠
IC801	C5HABZZ00051	IC, LINEAR	⚠
IC1001	0N3131-R.KT	IC, LINEAR	⚠
IC1001	0N3131-S.KT	IC, LINEAR	⚠
IC1002	TA76431ASTP6	IC, LINEAR	
IC1002	C0DAEMZ00001	IC, LINEAR	
IC3001	AN3479FBP-A	IC, LINEAR	
IC3201	MN3885S	IC, CCD 1H DELAY	E.S.D.
IC4501	LA4285	IC, LINEAR	
IC5301	AN5368FB	IC, LINEAR	
IC6001	MN101D06GCE	IC, 8BIT MICROCONTROLLER	E.S.D.
IC6002	B3NAA0000049	PHOTO INTERRUPTER	
IC6003	B3NAA0000049	PHOTO INTERRUPTER	
IC6004	C3EBCC000038	IC, 1K EEP ROM	E.S.D.
IC6004	AT24C01A10SI	IC, 1K EEP ROM	E.S.D.
IC6004	KS24C011IS	IC, 1K EEP ROM	E.S.D.
IC6004	M24C01-MN6	IC, 1K EEP ROM	E.S.D.
IC6005	C0EBJ0000080	IC, CMOS STANDARD LOGIC	E.S.D.
IC6005	C0EBJ0000099	IC, CMOS STADNARD LOGIC	E.S.D.
IC6005	RN5VS47CA-TR	IC, CMOS STANDARD LOGIC	E.S.D.

## TRANSISTORS



Ref. No.	Part No.	Part Name & Description	Remarks
Q431	2SA733-TQ	TRANSISTOR SI PNP	
Q431	2SA1175	TRANSISTOR SI PNP	
Q431	2SA1175-TH	TRANSISTOR SI PNP	
Q501	B1AACN000013	TRANSISTOR SI NPN	
Q531	2SA733-TQ	TRANSISTOR SI PNP	
Q531	2SA1175	TRANSISTOR SI PNP	
Q531	2SA1175-TH	TRANSISTOR SI PNP	
Q532	2SC945A-TQ	TRANSISTOR SI NPN	
Q532	2SC2785-TH	TRANSISTOR SI NPN	
Q532	2SC2785-TJ	TRANSISTOR SI NPN	
Q551	B1GARRAB0001	TRANSISTOR SI NPN ( A,B,C )	
Q551	2SD2578-RG	TRANSISTOR SI NPN ( D,E,F )	
Q571	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q571	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q581	B1ACBM000001	TRANSISTOR SI NPN CHIP	
Q581	2SA1767-Q	TRANSISTOR SI NPN	
Q581	2SB1221-Q	TRANSISTOR SI NPN	
Q801	2SC945A-TKA	TRANSISTOR SI NPN	
Q801	2SC1684-Q	TRANSISTOR SI NPN	
Q801	2SC1684-R	TRANSISTOR SI NPN	
Q801	2SC1684-S	TRANSISTOR SI NPN	
Q801	2SC2785-TE	TRANSISTOR SI NPN	
Q801	2SC2785-TF	TRANSISTOR SI NPN	
Q801	2SC2785-TH	TRANSISTOR SI NPN	
Q801	2SC2785-TJ	TRANSISTOR SI NPN	
Q801	2SC2785-TK	TRANSISTOR SI NPN	



Ref. No.	Part No.	Part Name & Description	Remarks
Q801	2SC3311AQA	TRANSISTOR SI NPN	
Q801	2SC3311ARA	TRANSISTOR SI NPN	
Q801	2SC3311ASA	TRANSISTOR SI NPN	
Q801	2SC945A-TPA	TRANSISTOR SI NPN	
Q801	2SC945A-TQA	TRANSISTOR SI NPN	
Q1001	2SC4533LP.KT	TRANSISTOR SI NPN	
Q1001	2SC4953LP.KT	TRANSISTOR SI NPN	
Q1001	2SC5130LF608	TRANSISTOR SI NPN	
Q1002	2SD1458	TRANSISTOR SI NPN	
Q1002	2SD225900A	TRANSISTOR SI NPN	
Q1051	2SD2159-T	TRANSISTOR SI NPN	
Q1051	2SD1581-T	TRANSISTOR SI NPN	
Q1052	2SD601-RS	TRANSISTOR SI NPN CHIP	
Q1052	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q1053	2SD235800A	TRANSISTOR SI NPN CHIP	
Q1053	B1AAQB000002	TRANSISTOR SI NPN CHIP	
Q3001	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q3001	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q3002	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q3002	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q3301	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q3301	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q4001	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q4001	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q4002	2SD1819A-RS	TRANSISTOR SI NPN CHIP	
Q4003	2SD1819A-RS	TRANSISTOR SI NPN CHIP	
Q4101	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q4101	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q4171	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q4171	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q5301	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q5301	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q5901	2SD225900A	TRANSISTOR SI NPN	
Q5901	2SD1858-RTV2	TRANSISTOR SI NPN	
Q6001	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q6001	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q6002	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6002	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6003	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6003	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6004	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q6004	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q6005	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q6005	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q6006	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q6009	VEKS5707	PHOTO SENSOR UNIT	
Q6010	VEKS5707	PHOTO SENSOR UNIT	

## DIODES



Ref. No.	Part No.	Part Name & Description	Remarks
D401	B0EAKL000049	DIODE SI	
D401	B0EAKL000044	DIODE SI	
D401	B0EAKL000045	DIODE SI	
D502	MA2C165001VT	DIODE SI	
D502	B0AACK000004	DIODE SI	
D502	1SS119	DIODE SI	
D503	ERB43-04V	DIODE SI	
D503	B0HAJP000012	DIODE SI	
D504	MAZ40470MF	DIODE ZENER 4.7V	
D504	MAZ40470HF	DIODE ZENER 4.7V	
D504	RD4.7ESAB	DIODE ZENER 4.7V	
D504	RD4.7ESAB2	DIODE ZENER 4.7V	
D504	04AZ4.7ZTPA7	DIODE ZENER 4.7V	
D507	MA2C165001VT	DIODE SI	
D507	B0AACK000004	DIODE SI	
D507	1SS119	DIODE SI	
D553	ERB43-04V	DIODE SI	
D553	B0HAJP000012	DIODE SI	
D554	4148-TA	DIODE SI	
D554	MA2C16700E	DIODE SI	
D556	MA2C18500E	DIODE SI ( A,B,C,F )	
D558	ERB43-04V	DIODE SI	
D558	B0HAJP000012	DIODE SI	
D560	ERB44-04V	DIODE SI	
D571	MAZ40470MF	DIODE ZENER 4.7V	
D571	B0BA4R600003	DIODE ZENER 4.7V	
D571	RD4.7ESAB2	DIODE ZENER 4.7V	
D572	MA4110N-H	DIODE ZENER 11V	
D573	MA2C165001VT	DIODE SI	
D573	B0AACK000004	DIODE SI	
D573	1SS119	DIODE SI	
D574	MA2C165001VT	DIODE SI	
D574	B0AACK000004	DIODE SI	
D574	1SS119	DIODE SI	
D591	D4DDF5R00002	THERMISTOR	⚠
D591	VRPSKF5JM050	THERMISTOR	⚠
D801	B0AAKT000010	DIODE SI	⚠
D801	B0EAKT000007	DIODE SI	⚠
D801	B0EAKT000027	DIODE SI	⚠
D802	B0AAKT000010	DIODE SI	⚠
D802	B0EAKT000007	DIODE SI	⚠
D802	B0EAKT000027	DIODE SI	⚠
D803	B0AAKT000010	DIODE SI	⚠
D803	B0EAKT000007	DIODE SI	⚠
D803	B0EAKT000027	DIODE SI	⚠
D804	B0AAKT000010	DIODE SI	⚠
D804	B0EAKT000007	DIODE SI	⚠
D804	B0EAKT000027	DIODE SI	⚠
D805	MA2C16700E	DIODE SI	



Ref. No.	Part No.	Part Name & Description	Remarks
D805	4148-TA	DIODE SI	
D881	ERZV10V361CS	SURGE ABSORBER	⚠
D881	D4EAA3610001	SURGE ABSORBER	⚠
D882	ERZV10V361CS	SURGE ABSORBER	⚠
D882	D4EAA3610001	SURGE ABSORBER	⚠
D1001	DB105G	DIODE SI	⚠
D1001	B0EBKR000003	DIODE SI	⚠
D1001	B0EBKR000006	DIODE SI	⚠
D1001	B0EBKR000020	DIODE SI	⚠
D1002	B0AAGP000001	DIODE SI	
D1002	B0HAJP000007	DIODE SI	
D1002	B0HAMP000061	DIODE SI	
D1003	B0AAGP000001	DIODE SI	
D1003	B0HAJP000007	DIODE SI	
D1003	B0HAMP000061	DIODE SI	
D1005	B0AAGP000001	DIODE SI	
D1005	B0HAJP000007	DIODE SI	
D1005	B0HAMP000061	DIODE SI	
D1006	ERC30-01L3	DIODE SI	
D1006	B0HANL000012	DIODE SI	
D1008	ERB81-004V1	DIODE SI	
D1008	B0JAME000010	DIODE SI	
D1008	B0JAME000049	DIODE SI	
D1008	B0JANE000011	DIODE SI	
D1015	MA2180LA	DIODE ZENER 18V	⚠
D1015	1N4746A-T	DIODE ZENER 18V	⚠
D1015	1N4746ARL	DIODE ZENER 18V	⚠
D1016	MA2C165001VT	DIODE SI	
D1016	B0AACK000004	DIODE SI	
D1016	1SS119	DIODE SI	
D1051	MA4110N-H	DIODE ZENER 11V	
D4171	MA2C165001VT	DIODE SI	
D4171	B0AACK000004	DIODE SI	
D4171	1SS119	DIODE SI	
D4591	MA4110-LTA	DIODE ZENER 11V	
D4591	MA4110N-H	DIODE ZENER 11V	
D4592	MA4110-LTA	DIODE ZENER 11V	
D4592	MA4110N-H	DIODE ZENER 11V	
D5501	MA4062-L	DIODE ZENER 6.2V	⚠
D5602	MA2C165001VT	DIODE SI	
D5602	B0AACK000004	DIODE SI	
D5602	1SS119	DIODE SI	
D5603	MA2C165001VT	DIODE SI	
D5603	B0AACK000004	DIODE SI	
D5603	1SS119	DIODE SI	
D6001	VEKS5708	SENSOR LED UNIT	
D6003	MA2C165001VT	DIODE SI	
D6003	B0AACK000004	DIODE SI	
D6003	1SS119	DIODE SI	
D6005	MA2C165001VT	DIODE SI	









Ref. No.	Part No.	Part Name & Description	Remarks
D6005	B0AACK000004	DIODE SI	
D6005	1SS119	DIODE SI	
D6301	B3AAA0000538	LIGHT EMITTING DIODE RED	
D6302	B3ACA0000192	LIGHT EMITTING DIODE ORANGE	
D6303	B3ABA0000400	LIGHT EMITTING DIODE GREEN	

## RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R401	ERDS2TJ821	CARBON 1/4W 820 ( A,B,C )	
R401	ERDS2TJ471	CARBON 1/4W 470 ( D,E,F )	
R402	ERJ6GEYJ183V	MGF CHIP 1/10W 18K ( A,B,C )	
R402	ERJ6GEYJ223V	MGF CHIP 1/10W 22K ( D,E,F )	
R409	ERJ6GEYJ273V	MGF CHIP 1/10W 27K ( A,B,C )	
R409	ERJ6GEYJ333V	MGF CHIP 1/10W 33K ( D,E,F )	
R410	ERDS2TJ152	CARBON 1/4W 1.5K ( A,B,C )	
R410	ERDS2TJ392	CARBON 1/4W 3.9K ( D,E,F )	
R411	ERJ6GEYJ823V	MGF CHIP 1/10W 82K	
R413	ERJ6GEYJ183V	MGF CHIP 1/10W 18K ( A,B,C )	
R413	ERJ6GEYJ273V	MGF CHIP 1/10W 27K ( D,E,F )	
R414	ERDS1FJ2R2	CARBON 1/2W 2.2 ( A,B,C )	
R414	ERDS1FJ1R2P	CARBON 1/2W 1.2 ( D,E,F )	
R422	ERD25FJ101P	CARBON 1/4W 100	
R427	ERQ14ZJ1R5P	FUSE 1/4W 1.5 ( A,B,C )	
R427	ERQ14AJ5R6P	FUSE 1/4W 5.6 ( D,E,F )	
R431	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R432	ERJ6GEYJ473V	MGF CHIP 1/10W 47K ( A,B,C )	
R432	ERJ6GEYJ563V	MGF CHIP 1/10W 56K ( D,E,F )	
R433	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R434	ERDS2TJ103	CARBON 1/4W 10K	
R435	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R436	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R466	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R468	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R471	ERDS1FJ152P	CARBON 1/2W 1.5K	
R472	ERDS2TJ332	CARBON 1/4W 3.3K	
R480	ERDS2TJ332	CARBON 1/4W 3.3K ( D,E,F )	
R501	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R502	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R503	ER0S2THF9101	PRECISION METAL FILM 1/4W 9.1K ( A,B,C )	
R503	ER0S2TKF9101	PRECISION METAL FILM 1/4W 9.1K ( A,B,C )	
R503	VRESR4TF9101	PRECISION METAL FILM 1/4W 9.1K ( A,B,C )	
R503	ER0S2THF7501	PRECISION METAL FILM 1/4W 7.5K ( D,E )	
R503	ER0S2TKF7501	PRECISION METAL FILM 1/4W 7.5K ( D,E )	
R503	VRESR4TF7501	PRECISION METAL FILM 1/4W 7.5K ( D,E )	
R503	ER0S2THF8201	PRECISION METAL FILM 1/4W 8.2K ( F )	
R503	ER0S2TKF8201	PRECISION METAL FILM 1/4W 8.2K ( F )	
R503	VRESR4TF8201	PRECISION METAL FILM 1/4W 8.2K ( F )	
R504	ERJ6GEY0R00V	MGF CHIP 1/10W 0	




Ref. No.	Part No.	Part Name & Description	Remarks
R505	ERDS2TJ561	CARBON 1/4W 560	
R509	ERDS2TJ101	CARBON 1/4W 100	
R511	ERG2ANJ222H	METAL OXIDE 2W 2.2K	
R515	ERG3FJ562H	METAL OXIDE 3W 5.6K	
R516	ERG3FJ562H	METAL OXIDE 3W 5.6K	
R517	ERDS2TJ472	CARBON 1/4W 4.7K	
R519	ERDS2TJ123	CARBON 1/4W 12K	
R520	ERDS2TJ562	CARBON 1/4W 5.6K	
R525	ERDS2TJ122	CARBON 1/4W 1.2K	
R529	ERDS2TJ103	CARBON 1/4W 10K	
R531	ERDS2TJ223	CARBON 1/4W 22K	
R533	ERDS2TJ332	CARBON 1/4W 3.3K	
R534	ERDS2TJ681	CARBON 1/4W 680	
R535	ERDS2TJ471	CARBON 1/4W 470	
R536	ERG2ANJ153H	METAL OXIDE 2W 15K	
R537	ERG2ANJ153H	METAL OXIDE 2W 15K	
R538	ERDS2TJ473	CARBON 1/4W 47K	
R539	ERDS2TJ473	CARBON 1/4W 47K	
R540	ERDS2TJ562	CARBON 1/4W 5.6K	
R541	ERDS2TJ222	CARBON 1/4W 2.2K	
R542	ERDS2TJ473	CARBON 1/4W 47K	
R543	ERDS2TJ102	CARBON 1/4W 1K	
R544	ERDS2TJ101	CARBON 1/4W 100	
R545	ERDS2TJ152	CARBON 1/4W 1.5K	
R546	ERDS2TJ223	CARBON 1/4W 22K	
R552	ERDS2TJ472	CARBON 1/4W 4.7K	
R553	ERDS2TJ102	CARBON 1/4W 1K	
R554	ERDS2TJ103	CARBON 1/4W 10K ( A,B,C )	
R554	ERDS2TJ123	CARBON 1/4W 12K ( D,E,F )	
R555	ERDS2TJ154	CARBON 1/4W 150K ( A,B,C )	
R555	ERDS2TJ823	CARBON 1/4W 82K ( D,E,F )	
R556	ERDS2TJ823	CARBON 1/4W 82K	
R557	ERG2SJ471H	METAL OXIDE 2W 470 ( A,B,C )	
R557	ERG2SJ331H	METAL OXIDE 2W 330 ( F )	
R558	ERG2ANJ471H	METAL OXIDE 2W 470 ( A,B,C )	
R558	ERG2ANJ561H	METAL OXIDE 2W 560 ( D,E,F )	
R559	ERDS2TJ123	CARBON 1/4W 12K ( D,E,F )	
R561	ERQ1CJP2R2S	FUSE 1W 2.2 ( A,B,C )	
R561	ERQ1CKPR47S	FUSE 1W 0.47 ( D,E,F )	
R562	ERF2AK3R9P	W FLMPRF 2W 3.9 ( D,E,F )	
R571	ERDS2TJ101	CARBON 1/4W 100	
R572	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R573	ERDS2TJ221	CARBON 1/4W 220	
R574	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R581	ERDS1FJ2R2	CARBON 1/2W 2.2 ( A,B,C )	
R581	ERDS1FJ1R5P	CARBON 1/2W 1.5 ( D,E,F )	
R582	ERDS1FJ2R2	CARBON 1/2W 2.2 ( A,B,C )	
R582	ERDS1FJ1R5P	CARBON 1/2W 1.5 ( D,E,F )	
R584	ERDS2TJ562	CARBON 1/4W 5.6K ( A,B,C )	
R584	ERDS2TJ272	CARBON 1/4W 2.7K ( D,E,F )	
R585	ERDS2TJ473	CARBON 1/4W 47K	
R586	ERDS2TJ393	CARBON 1/4W 39K	



Ref. No.	Part No.	Part Name & Description	Remarks
R591	ERF5ZJ121	W FLMPRF 5W 120 ( D,E )	
R801	ERF3AKR82	W FLMPRF 3W 0.82	
R801	LAR03R82K02	W FLMPRF 3W 0.82	
R802	ERDS1FJ103P	CARBON 1/2W 10K	
R802	ERDS1FPJ103	CARBON 1/2W 10K	
R804	ERF10ZJ331	W FLMPRF 10W 330 ( A,B,C )	
R804	ERF15ZJ181	W FLMPRF 15W 180 ( D,E,F )	
R805	ERDS2TJ104	CARBON 1/4W 100K	
R806	ERQ14AJ470P	FUSE 1/4W 47	
R810	ERDS2TJ103	CARBON 1/4W 10K	
R813	ERDS2TJ104	CARBON 1/4W 100K	
R818	VRESC2TK825T	SOLID 1/2W 8.2M	
R865	ERDS2TJ222	CARBON 1/4W 2.2K	
R1003	D0AF334JA038	CARBON 1/2W 330K	
R1004	ERG2SJ333H	METAL OXIDE 2W 33K	
R1005	ERG1SJ560P	METAL OXIDE 1W 56	
R1006	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1007	ERDS2TJ101	CARBON 1/4W 100	
R1008	ERDS2TJ392	CARBON 1/4W 3.9K	
R1010	ERD25FJ100P	CARBON 1/4W 10	
R1010	ERD25FPJ100P	CARBON 1/4W 10	
R1010	VRESF4FJ100P	CARBON 1/4W 10	
R1014	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1016	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R1017	D1BD2431A016	MGF CHIP 1/10W 2.43K	
R1018	D0HD222ZA002	MGF CHIP 1/10W 2.2K	
R1025	ERDS2TJ300T	CARBON 1/4W 30	
R1026	ERDS2TJ300T	CARBON 1/4W 30	
R1051	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R1052	ERDS2TJ153	CARBON 1/4W 15K	
R1053	ERDS2TJ153	CARBON 1/4W 15K	
R1057	ERDS2TJ331	CARBON 1/4W 330	
R1058	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R3001	ERDS2TJ101	CARBON 1/4W 100	
R3006	ERDS2TJ101	CARBON 1/4W 100	
R3016	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3017	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3024	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R3025	ERJ6GEYJ125V	MGF CHIP 1/10W 1.2M	
R3026	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R3028	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R3029	ERJ6GEYJ151V	MGF CHIP 1/10W 150	
R3032	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3035	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3036	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3037	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3038	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3044	ERJ6GEYG562V	MGF CHIP 1/10W 5.6K ( A,B,D,E,F )	
R3045	ERJ6GEYG222V	MGF CHIP 1/10W 2.2K ( A,B,D,E,F )	
R3047	ERJ6GEYG102V	MGF CHIP 1/10W 1K ( A,B,D,E,F )	




Ref. No.	Part No.	Part Name & Description	Remarks
R3077	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3084	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3086	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R3091	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3301	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3302	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R3303	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4002	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R4003	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R4004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4005	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R4006	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R4007	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R4008	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R4009	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4010	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4011	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4012	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4018	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K ( A,D,E )	
R4018	ERJ6GEYJ123V	MGF CHIP 1/10W 12K ( B,C,F )	
R4021	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4101	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R4102	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R4103	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4172	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4175	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4502	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4504	ERJ6GEYJ823V	MGF CHIP 1/10W 82K	
R4509	ERDS2TJ100	CARBON 1/4W 10	
R4521	ERQ1ABJP4R7S	FUSE 1W 4.7	
R4523	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4524	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R4591	ERDS2TJ681	CARBON 1/4W 680	
R4592	ERDS2TJ681	CARBON 1/4W 680	
R4593	ERDS2TJ681	CARBON 1/4W 680	
R4594	ERDS2TJ681	CARBON 1/4W 680	
R4701	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5301	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5304	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R5305	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R5306	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5307	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R5308	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R5309	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R5311	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5312	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5313	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5314	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R5315	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R5316	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R5317	ERDS2TJ101	CARBON 1/4W 100	



NO.	DESCRIPTION	STATUS	DATE
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Ref. No.	Part No.	Part Name & Description	Remarks
R5324	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5401	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5402	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R5403	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5405	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R5406	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5501	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5502	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R5503	ERDS2TJ471	CARBON 1/4W 470	
R5504	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5505	ERJ6ENF3241V	MGF CHIP 1/10W 3.24K	
R5506	ERDS2TJ473	CARBON 1/4W 47K	
R5508	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5510	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5511	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5512	ERDS2TJ151	CARBON 1/4W 150	
R5513	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5601	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R5604	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R5611	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5612	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5614	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R5902	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5932	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5933	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6002	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6003	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6004	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6005	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6007	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6008	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6014	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6015	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6016	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6017	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6018	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6019	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6021	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6022	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6023	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6024	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6025	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6026	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6028	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6029	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6030	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6032	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6035	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6040	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6041	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6042	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6044	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6045	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	



1997	1998-2001	2002-2007	2008-2012
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










Ref. No.	Part No.	Part Name & Description	Remarks
R6046	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6049	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6050	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6053	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6054	ERJ6GEYJ102V	MGF CHIP 1/10W 1K ( B,C,F )	
R6055	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6056	ERJ6GEYJ102V	MGF CHIP 1/10W 1K ( B,C,F )	
R6057	ERJ6GEYJ102V	MGF CHIP 1/10W 1K ( B,C,F )	
R6058	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6059	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6060	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6061	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6062	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6063	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6064	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6066	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6067	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6077	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6078	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6080	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R6081	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R6082	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6084	ERJ6GEYJ273V	MGF CHIP 1/10W 27K ( B,C,F )	
R6090	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R6091	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R6092	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R6098	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6099	ERJ6GEYJ153V	MGF CHIP 1/10W 15K ( C )	
R6100	ERJ6GEYJ153V	MGF CHIP 1/10W 15K ( C )	
R6113	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6114	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R6115	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6116	ERDS2TJ101	CARBON 1/4W 100	
R6118	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6119	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6120	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6121	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6122	ERJ6GEYJ181V	MGF CHIP 1/10W 180	
R6123	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6124	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6126	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6127	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6130	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6131	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R6132	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R6133	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6134	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6135	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
R6136	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6137	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6138	ERDS2TJ560T	CARBON 1/4W 56	
R6142	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6143	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6144	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	



Ref. No.	Part No.	Part Name & Description	Remarks
R6145	ERJ6GEYJ273V	MGF CHIP 1/10W 27K ( C )	
R6146	ERJ6GEYJ273V	MGF CHIP 1/10W 27K ( A,B,D,E,F )	
R6150	ERJ6GEYJ912V	MGF CHIP 1/10W 9.1K ( A,D,E )	
R6150	ERJ6GEYJ273V	MGF CHIP 1/10W 27K ( B,C,F )	
R6160	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6161	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6162	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6163	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6164	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6165	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6166	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6170	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6201	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6202	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6203	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R6204	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R6205	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6207	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6208	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R6209	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6210	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6211	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6212	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R6301	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6302	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6303	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6304	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6305	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6306	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6307	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6316	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R7001	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7002	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7003	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7004	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7006	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R7007	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	

## CAPACITORS



Ref. No.	Part No.	Part Name & Description	Remarks
C401	ECEA1HGE2R2	ELECTROLYTIC 50V 2.2UF	
C402	ECA1CM471B	ELECTROLYTIC 16V 470	
C408	ECA1HGE010KB	ELECTROLYTIC 50V 1UF	
C409	ECA1VM101B	ELECTROLYTIC 35V 100	
C413	ECQB1H104KF	POLYESTER 50V 0.1UF	
C414	ECA1EM102E	ELECTROLYTIC 25V 1000UF ( A,B,C )	
C414	ECA1VM102B	ELECTROLYTIC 35V 1000UF ( D,E,F )	
C418	ECA1VM221B	ELECTROLYTIC 35V 220UF	
C459	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C510	ECKR2H681KB5	CERAMIC 500V 680PF ( A,B,C )	
C510	ECKR2H102KB5	CERAMIC 500V 1000PF ( D,E,F )	
C513	ECA1HM470B	ELECTROLYTIC 50V 47UF	
C524	ECKC3D391KBP	CERAMIC 2KV 390 PF ( A,B,C )	
C524	ECKW3D391KBP	CERAMIC 2KV 390PF ( A,B,C )	
C531	ECEA1HKA3R3I	ELECTROLYTIC 50V 3.3UF	
C533	ECA1EM101B	ELECTROLYTIC 25V 100UF	
C534	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C552	ECA1EM221B	ELECTROLYTIC 25V 220	
C553	ECKR2H471KB5	CERAMIC 500V 470PF	
C554	ECWH12H622JS	POLYESTER 1.2KV 6200PF ( A,B,C )	
C554	ECWH16622JVB	POLYESTER 1250V 6200PF ( A,B,C )	
C554	ECWH12H912JS	POLYESTER 1.2KV 9100PF ( D,E,F )	
C554	ECWH16912JVB	POLYESTER 1250V 9100PF ( D,E,F )	
C556	ECWF2334JBB	POLYESTER 500V 0.33UF ( A,B,C )	
C556	ECWF2434JBB	POLYESTER 500V 0.43UF ( D,E,F )	
C558	ECA1VM221B	ELECTROLYTIC 35V 220UF ( A,B,C )	
C558	ECA1VM331B	ELECTROLYTIC 35V 330UF ( D,E,F )	
C560	ECA2EM100B	ELECTROLYTIC 250V 10UF	
C561	ECA1HM2R2B	ELECTROLYTIC 50V 2.2UF	
C563	ECEA180V33WE	ELECTROLYTIC 180V 33UF	
C571	ECEA1HKA3R3I	ELECTROLYTIC 50V 3.3UF ( A,B,C )	
C571	ECEA1EKA100I	ELECTROLYTIC 25V 10UF ( D,E,F )	
C572	ECA1CM221B	ELECTROLYTIC 16V 220UF	
C573	ECKR2H122KB5	CERAMIC 50V 1200PF ( D,E,F )	
C801	VCKSRNG472ZX	CERAMIC 250V 4700PF	
C802	VCKSRNG472ZX	CERAMIC 250V 4700PF	
C803	VCKSRNG472ZX	CERAMIC 250V 4700PF	
C804	VCKSRNG472ZX	CERAMIC 250V 4700PF	
C805	ECES2DU221EG	ELECTROLYTIC 200V 220UF ( A,B,C )	
C805	EC0S2PP471BB	ELECTROLYTIC 180V 470UF ( D,E,F )	
C805	ECES2PU471HG	ELECTROLYTIC 180V 470UF ( D,E,F )	
C806	ECA2EM100E	ELECTROLYTIC 250V 10UF ( A,B,C )	
C806	ECA2EM220E	ELECTROLYTIC 250V 22UF ( D,E,F )	
C807	J0LE00000023	ARRESTER	
C808	ECQU2A823MLA	POLYESTER 250V 0.082UF	
C808	LSCFQ2A823MC	POLYESTER 250V 0.082UF	
C809	F1B2E101A009	CERAMIC 250V 100PF	
C809	F1B2E101A008	CERAMIC 250V 100PF	



Ref. No.	Part No.	Part Name & Description	Remarks
C809	F1B2E101A032	CERAMIC 250V 100PF	⚠
C809	F1B2E101A033	CERAMIC 250V 100PF	⚠
C811	F1B2E152A012	CERAMIC 250V 1500PF	⚠
C811	F1B2E152A011	CERAMIC 250V 1500PF	⚠
C811	F1B2E152A044	CERAMIC 250V 1500PF	⚠
C811	F1B2E152A045	CERAMIC 250V 1500PF	⚠
C811	F1B2E1520002	CERAMIC 250V 1500PF	⚠
C811	F1B2E1520006	CERAMIC 250V 1500PF	⚠
C1001	ECKATS103MF	CERAMIC 250V 0.01UF	⚠
C1001	ECKETS103MF	CERAMIC 125V 0.01UF	⚠
C1001	VCKST3G103MY	CERAMIC 250V 0.01UF	⚠
C1001	VCKSU3D103MY	CERAMIC 125V 0.01UF	⚠
C1002	ECKATS332ME8	CERAMIC 250V 3300PF	⚠
C1002	ECKDNB332ME8	CERAMIC 125V 3300PF	⚠
C1002	ECKETS332ME8	CERAMIC 125V 3300PF	⚠
C1002	VCKST3G332MX	CERAMIC 250V 3300PF	⚠
C1002	VCKSU3D332MX	CERAMIC 125V 3300PF	⚠
C1003	F1B2E102A012	CERAMIC 250V 1000PF	⚠
C1003	F1B2E102A011	CERAMIC 250V 1000PF	⚠
C1003	F1B2E102A044	CERAMIC 250V 1000PF	⚠
C1003	F1B2E102A045	CERAMIC 250V 1000PF	⚠
C1003	F1B2E1020005	CERAMIC 250V 1000PF	⚠
C1003	F1B2E1020006	CERAMIC 250V 1000PF	⚠
C1004	ECEA2DU121YE	ELECTROLYTIC 200V 120UF	⚠
C1004	F2A2D1210001	ELECTROLYTIC 200V 120UF	⚠
C1004	F2A2D1210003	ELECTROLYTIC 200V 120UF	⚠
C1004	VCESR2D121XE	ELECTROLYTIC 200V 120UF	⚠
C1005	ECA2DHG4R7B	ELECTROLYTIC 200V 4.7UF	
C1006	ECKR2H221KB5	CERAMIC 500V 220PF	
C1007	ECJ2VB1C224K	CERAMIC 16V 0.22UF	
C1009	VCYSBRE183KX	CERAMIC 25V 0.018UF	
C1010	ECJ2VB1H102K	C CHIP 50V 1000PF	
C1011	ECA1HHG470B	ELECTROLYTIC 50V 47UF	
C1012	ECEA1PEE331	ELECTROLYTIC 18V 330UF	
C1013	ECA1EM331B	ELECTROLYTIC 25V 330UF	
C1016	ECEA1PEE331	ELECTROLYTIC 18V 330UF	
C1017	ECA0JM102B	ELECTROLYTIC 6.3V 1000UF	
C1018	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C1025	F1B2E101A009	CERAMIC 250V 100PF	⚠
C1025	F1B2E101A008	CERAMIC 250V 100PF	⚠
C1025	F1B2E101A032	CERAMIC 250V 100PF	⚠
C1025	F1B2E101A033	CERAMIC 250V 100PF	⚠
C1029	ECJ2VC1H101J	C CHIP 50V 100PF	
C1030	VCYSBRE183KX	CERAMIC 25V 0.018UF	



Ref. No.	Part No.	Part Name & Description	Remarks
C1051	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C1052	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C1058	ECEA0JEE101	ELECTROLYTIC 6.3V 100UF	
C1059	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C1060	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C3003	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3004	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3006	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3007	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C3008	ECJ2VC1H181J	C CHIP 50V 180PF	
C3009	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C3010	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3013	ECJ2VF1C224Z	C CHIP 16V 0.22UF	
C3015	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C3016	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3019	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3020	ECEA1CKA220	ELECTROLYTIC 16V 22UF	
C3021	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3022	ECJ2VF1C224Z	C CHIP 16V 0.22UF	
C3023	ECJ2VC1H680J	C CHIP 50V 68PF	
C3024	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3025	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C3026	ECJ2VB1H822K	C CHIP 50V 8200PF	
C3027	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3030	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3031	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3032	ECJ2VF1C474Z	C CHIP 16V 0.47UF	
C3034	ECJ2VC1H181J	C CHIP 50V 180PF	
C3035	ECJ2VC1H330J	C CHIP 50V 33PF	
C3036	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3038	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3041	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3043	ECJ2VB1H392K	C CHIP 50V 3900PF	
C3044	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3045	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C3046	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3047	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C3048	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3050	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3053	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3055	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3056	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3057	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3058	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3082	ECJ2VB1H332K	C CHIP 50V 3300PF	
C3231	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C3232	ECJ2VB1H102K	C CHIP 50V 1000PF	
C3234	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C3235	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3236	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3237	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C4001	ECJ2VF1C224Z	C CHIP 16V 0.22UF	
C4002	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4003	ECJ2VB1H272K	C CHIP 50V 2700PF	














Ref. No.	Part No.	Part Name & Description	Remarks
C4004	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4005	ECEA0JKA220	ELECTROLYTIC 6.3V 22UF	
C4006	ECJ2VB1H102K	C CHIP 50V 1000PF	
C4007	ECEA0JKA220	ELECTROLYTIC 6.3V 22UF	
C4008	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C4009	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4010	ECJ2VB1E333K	C CHIP 25V 0.033UF	
C4011	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4012	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4013	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C4014	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4018	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4020	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4102	ECQB1562JF3	POLYESTER 100V 5600PF	
C4103	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4104	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4105	ECEA1CKA220	ELECTROLYTIC 16V 22UF	
C4171	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4502	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4504	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4506	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C4508	ECA1CM221B	ELECTROLYTIC 16V 220UF	
C4509	ECJ2VB1E473K	C CHIP 25V 0.047UF	
C4521	ECA1EM102B	ELECTROLYTIC 25V 1000UF	
C4524	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5301	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5302	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C5303	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C5305	ECEA1HKAR33	ELECTROLYTIC 50V 0.33UF	
C5306	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5307	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5308	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5401	VCUSTBC224KB	C CHIP 16V 0.22UF	
C5402	ECJ2VB1H222K	C CHIP 50V 2200PF	
C5403	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C5501	ECJ2VB1E183K	C CHIP 25V 0.018UF	
C5502	ECJ2VB1H681K	C CHIP 50V 680PF	
C5505	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C5506	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5507	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5508	ECUV1H221JSN	C CHIP 50V 220PF	
C5510	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C5511	ECJ2VB1E333K	C CHIP 25V 0.033UF	
C5516	ECJ2VB1E333K	C CHIP 25V 0.033UF	
C5601	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5602	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C5603	ECJ2VC1H150J	C CHIP 50V 15PF	
C5604	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C5605	ECJ2VB1E153K	C CHIP 25V 0.015UF	
C5902	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C5903	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C5904	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5905	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C5906	ECJ2VF1H103Z	C CHIP 50V 0.01UF	



Ref. No.	Part No.	Part Name & Description	Remarks
C5932	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C6001	ECEA0JKA331	ELECTROLYTIC 6.3V 330UF	
C6002	ECJ2VC1H080C	C CHIP 50V 8PF	
C6003	ECJ2VC1H100C	C CHIP 50V 10PF	
C6004	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C6006	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6009	ECEA1CKS100	ELECTROLYTIC 16V 10UF	
C6013	ECJ2VC1H101J	C CHIP 50V 100PF	
C6017	ECJ2VC1H101J	C CHIP 50V 100PF	
C6018	ECJ2VC1H101J	C CHIP 50V 100PF	
C6020	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6021	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6023	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C6025	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C6029	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6040	ECJ2VB1H102K	C CHIP 50V 1000PF	
C6041	ECJ2VB1H102K	C CHIP 50V 1000PF	
C6044	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C6201	ECJ2VB1H102K	C CHIP 50V 1000PF	
C6202	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C6203	ECJ2VB1H332K	C CHIP 50V 3300PF	
C6204	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C6207	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6208	ECEA1CKS100	ELECTROLYTIC 16V 10UF	
C6209	ECJ2VB1H102K	C CHIP 50V 1000PF	
C6212	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6213	ECEA0JKS331I	ELECTROLYTIC 6.3V 330UF	
C6214	ECEA0JKS220	ELECTROLYTIC 6.3V 22UF	
C6215	ECJ2VB1H272K	C CHIP 50V 2700PF	
C6216	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C6220	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C6221	ECEA0JKA221	ELECTROLYTIC 6.3V 220UF	
C6302	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6401	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6402	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6403	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C6404	ECJ2VC1H121J	C CHIP 50V 120PF	
C6406	ECEA1HKS010	ELECTROLYTIC 50V 1UF	
C6408	ECJ2VB1H222K	C CHIP 50V 2200PF	
C6410	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C7002	ECJ2VB1H102K	C CHIP 50V 1000PF	
C7006	ECA0JM102B	ELECTROLYTIC 6.3V 1000UF	
C7007	ECJ2VB1H102K	C CHIP 50V 1000PF	
C7008	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C7010	ECEA1HKA010	ELECTROLYTIC 50V 1UF	

## COILS



Ref. No.	Part No.	Part Name & Description	Remarks
L501	ELH5L423	COIL ( D,E,F )	
L501	ELH5L4108	COIL ( D,E,F )	
L501	G0D510000001	COIL ( D,E,F )	
L553	VLQSW07D220M	COIL 22UH	
L803	ELF21V018A	LINE NOISE FILTER	
L803	LLN63055A	COIL	
L1001	ELF15N005A	LINE FILTER 0.5A 18MH	
L1001	ELF18D290A	LINE FILTER 0.5A 18MH	
L1001	G0B183D00001	LINE FILTER 0.5A 18MH	
L1001	J0HBLD000001	LINE FILTER 0.5A 18MH	
L1001	VLQS0167	LINE FILTER 0.5A 18MH	
L1001	VLQS0170	LINE FILTER 0.6A 18MH	
L1002	VLQSAB7D220K	COIL 22UH	
L1003	VLQSAB7D100K	COIL 10UH	
L1006	J0JHB0000021	FILTER	
L1007	G0C101KA0045	COIL 100UH	
L3001	G0C390KA0045	COIL 39UH	
L3002	ELESN101KA	COIL 100UH	
L3005	G0C330KA0045	COIL 33UH	
L3010	ELESN470KA	COIL 47UH	
L3231	ELESN221KA	COIL 220UH	
L4001	ELELN153KA	COIL 15MH	
L4002	ELESN101KA	COIL 100UH	
L4004	G0C220KA0045	COIL 22UH	
L4101	ELESN471KA	COIL 470UH	
L5901	ELESN101KA	COIL 100UH	
L5902	ELESN470KA	COIL 47UH	
L6201	ELEXT101KE04	COIL 100UH	
L6401	ELEXT101KE04	COIL 100UH	
L6402	J0JBC0000022	CHIP BEAD INDUCTOR	
L6403	J0JBC0000022	CHIP BEAD INDUCTOR	
L6404	J0JBC0000022	CHIP BEAD INDUCTOR	
L6405	J0JBC0000022	CHIP BEAD INDUCTOR	
L7002	ELESN100KA	COIL 10UH	

## CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X5501	H2A503300012	CRYSTAL OSCILLATOR	
X5601	VSXS0190-TB	CRYSTAL OSCILLATOR	
X6001	VSXS0784	CRYSTAL OSCILLATOR	

## PIN HEADERS
















Ref. No.	Part No.	Part Name & Description	Remarks
P552	LSJWS4N250LL	PIN HEADER ( A,B,C )	
P552	LSJWS4N360LL	PIN HEADER ( D,E,F )	
P801	VEKS5809	CONNECTOR CABLE W/OUT PLUG,200V	
P803	LSJP0814	CONNECTOR 2P	
P3001	K1KA08A00305	CONNECTOR 8P ( A,B,D,E,F )	
P3001	K1KA12A00232	CONNECTOR 12P ( C )	
P4001	VJSS0888	FE CONNECTOR 2P	
P4002	LSJWR6N120CL	PARALLEL WIRE	
P4591	K1KA02A00229	CONNECTOR 2P	
P5301	LSJWR4N380LL	CONNECTOR CABLE W/OUT PLUG,12V DC ( A,B,C )	
P5301	LSJWR4N490LL	CONNECTOR CABLE W/OUT PLUG,12V DC ( D,E,F )	
P6001	K1KA05A00177	CONNECTOR 5P	
P6201	K1KA12A00234	PIN HEADER	

## SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6001	LSSH0002	LEAF SWITCH-SAFETY TAB	
SW6002	LSSS0008	MODE SWITCH	
SW6301	EVQ21405R	PUSH SWITCH	
SW6302	EVQ21405R	PUSH SWITCH	
SW6303	EVQ21405R	PUSH SWITCH	
SW6304	EVQ21405R	PUSH SWITCH	
SW6305	EVQ21405R	PUSH SWITCH	
SW6306	EVQ21405R	PUSH SWITCH	
SW6307	EVQ21405R	PUSH SWITCH	
SW6308	EVQ21405R	PUSH SWITCH	
SW6309	EVQ21405R	PUSH SWITCH	
SW6310	EVQ21405R	PUSH SWITCH	
SW6311	EVQ21405R	PUSH SWITCH	

## FUSE& PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F801	K5D402AB0002	FUSE 125V 4A	
F801	K5D402ADA002	FUSE 125V 4A	
F801	K5D402AQ0002	FUSE 125V 4A	
F1001	VSFS0003A16	FUSE 125V 1.6A	
F1001	K5D162AB0003	FUSE 125V 1.6A	
F1001	K5D162ADA001	FUSE 125V 1.6A	
F1001	K5D162AQ0004	FUSE 125V 1.6A	
PR1001	UNH000600A	IC PROTECTOR 1.5A	
PR1001	B1ZAZ0000040	IC PROTECTOR 1.5A	
PR1001	LSSF009A25E	IC PROTECTOR 1.5A	
PR1002	UNH000600A	IC PROTECTOR 1.5A	
PR1002	B1ZAZ0000040	IC PROTECTOR 1.5A	
PR1002	LSSF009A25E	IC PROTECTOR 1.5A	

## RELAY



Ref. No.	Part No.	Part Name & Description	Remarks
RL801	LSSY0004	RELAY	⚠
RL801	K6B1AGA00042	RELAY,120V	⚠
RL801	TSEH0013	RELAY	⚠
RL801	TSEH1860-1	RELAY	⚠
RL801	TSEH8007	RELAY,120V	⚠

### TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T501	ETH09K6AZ	TRANSFORMER ( A,B,C )	
T501	ETH09K13AZ	TRANSFORMER ( D,E,F )	
T551	KFT2AB399F	FLYBACK TRANSFORMER ( A,B,C )	⚠
T551	KFT3AB400F	FLYBACK TRANSFORMER ( D,E,F )	⚠
T1001	ETS28AD2J3AC	SW TRANSFORMER	⚠
T1001	ETS28AD2J3NC	TRANSFORMER	⚠
T1001	LSTP0105	TRANSFORMER	⚠
T1001	LSTP0105-1	TRANSFORMER	⚠
T1001	VTPS0042	SW TRANSFORMER	⚠
T1001	VTPS0042-1	SW TRANSFORMER	⚠
T4101	VLTS0304	TRANSFORMER	

### JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK4591	K2HC103B0130	FRONT AUDIO/VIDEO JACK SOCKET	
JK4701	K2HA204B0114	EARPHONE JACK SOCKET	

### MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
483	XYN3+F10S	SCREW W/WASHER,STEEL	
487	XYN3+J8	SCREW W/WASHER,STEEL ( D,E,F )	
488	XYN3+F6S	SCREW W/WASHER,STEEL	
497	XTV3+10J	TAPPING SCREW,STEEL	
711	PNA4611M00HC	INFRARED RECEIVER UNIT	
719	VMFS0136	SHEET,NYLON-RAYON ( D,E,F )	
743	ENG36706GD	TUNER,UHF/VHF NR ( A,D,E )	
743	ENG36709GD	TUNER,UHF/VHF NR ( B,C,F )	
751	LML69001A	ANODE LEAD CLAMPER	
758	TUC77616	HEAT SINK ( A,B,C )	
766	TUC76677-1	HEAT SINK ( A,B,C )	
767	TUC77626	HEAT SINK ( D,E,F )	
768	TUC77603-1	HEAT SINK ( D,E,F )	
769	LUS23005B	HEAT SINK ( D,E,F )	
771	EYF52BC	FUSE HOLDER	







## 12.3.2. TV/VCR MAIN C.B.A. ( Model: G,H )



#### COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PVQ-1312W	A	VV-2002	E
PV-C1322-K	B	PV-C2022-K	F
PV-C1352W-K	C	PVQ-2512	G
PVQ-2012	D	PV-C2542	H

#### INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC451	C1AA00000024	IC, LINEAR	
IC501	0N3131-R.KT	IC, LINEAR	
IC501	0N3131-S.KT	IC, LINEAR	
IC502	0N3131-R.KT	IC, LINEAR	
IC801	C5HABZZ00051	IC, LINEAR	
IC1001	0N3131-R.KT	IC, LINEAR	
IC1001	0N3131-S.KT	IC, LINEAR	
IC1002	TA76431ASTP6	IC, LINEAR	
IC1002	C0DAEMZ00001	IC, LINEAR	
IC3001	AN3479FBP-A	IC, LINEAR	
IC3201	MN3885S	IC, CCD 1H DELAY	E.S.D.
IC4501	LA4285	IC, LINEAR	
IC5301	AN5368FB	IC, LINEAR	
IC6001	MN101D06GCE	IC, 8BIT MICROCONTROLLER	E.S.D.
IC6002	B3NAA0000049	PHOTO INTERRUPTER	
IC6003	B3NAA0000049	PHOTO INTERRUPTER	
IC6004	C3EBCC000038	IC, 1K EEP ROM	E.S.D.
IC6004	AT24C01A10SI	IC, 1K EEP ROM	E.S.D.
IC6004	KS24C011IS	IC, 1K EEP ROM	E.S.D.
IC6004	M24C01-MN6	IC, 1K EEP ROM	E.S.D.
IC6005	C0EBJ0000080	IC, CMOS STANDARD LOGIC	E.S.D.
IC6005	C0EBJ0000099	IC, CMOS STADNARD LOGIC	E.S.D.
IC6005	RN5VS47CA-TR	IC, CMOS STANDARD LOGIC	E.S.D.

#### TRANSISTORS



Ref. No.	Part No.	Part Name & Description	Remarks
Q431	2SA733-TQ	TRANSISTOR SI PNP	
Q431	2SA1175	TRANSISTOR SI PNP	
Q431	2SA1175-TH	TRANSISTOR SI PNP	
Q501	B1AACN000013	TRANSISTOR SI NPN	
Q531	2SA733-TQ	TRANSISTOR SI PNP	
Q531	2SA1175	TRANSISTOR SI PNP	
Q531	2SA1175-TH	TRANSISTOR SI PNP	
Q532	2SC945A-TQ	TRANSISTOR SI NPN	
Q532	2SC2785-TH	TRANSISTOR SI NPN	
Q532	2SC2785-TJ	TRANSISTOR SI NPN	
Q551	B1BAER000007	TRANSISTOR SI NPN	⚠
Q571	2SD601-RS	TRANSISTOR SI NPN CHIP	
Q571	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q581	B1ACBM000001	TRANSISTOR SI NPN	
Q581	2SA1767-Q	TRANSISTOR SI NPN	
Q581	2SB1221-Q	TRANSISTOR SI NPN	
Q801	2SC945A-TKA	TRANSISTOR SI NPN	
Q801	2SC1684-Q	TRANSISTOR SI NPN	
Q801	2SC1684-R	TRANSISTOR SI NPN	
Q801	2SC1684-S	TRANSISTOR SI NPN	
Q801	2SC2785-TE	TRANSISTOR SI NPN	
Q801	2SC2785-TF	TRANSISTOR SI NPN	
Q801	2SC2785-TH	TRANSISTOR SI NPN	
Q801	2SC2785-TJ	TRANSISTOR SI NPN	
Q801	2SC2785-TK	TRANSISTOR SI NPN	
Q801	2SC3311AQA	TRANSISTOR SI NPN	
Q801	2SC3311ARA	TRANSISTOR SI NPN	
Q801	2SC3311ASA	TRANSISTOR SI NPN	
Q801	2SC945A-TPA	TRANSISTOR SI NPN	
Q801	2SC945A-TQA	TRANSISTOR SI NPN	
Q1001	2SC4533LP.KT	TRANSISTOR SI NPN	⚠
Q1001	2SC4953LP.KT	TRANSISTOR SI NPN	⚠
Q1001	2SC5130LF608	TRANSISTOR SI NPN	⚠
Q1002	2SD1458	TRANSISTOR SI NPN	
Q1002	2SD225900A	TRANSISTOR SI NPN	
Q1051	2SD2159-T	TRANSISTOR SI NPN	
Q1051	2SD1581-T	TRANSISTOR SI NPN	
Q1052	2SD601-RS	TRANSISTOR SI NPN CHIP	
Q1052	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q1053	2SD235800A	TRANSISTOR SI NPN CHIP	
Q1053	B1AAQB000002	TRANSISTOR SI NPN CHIP	
Q3001	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q3001	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q3002	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q3002	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q3301	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q3301	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q4001	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q4001	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q4002	2SD1819A-RS	TRANSISTOR SI NPN CHIP	
Q4003	2SD1819A-RS	TRANSISTOR SI NPN CHIP	
Q4101	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q4101	B1ABCF000011	TRANSISTOR SI NPN CHIP	



























Ref. No.	Part No.	Part Name & Description	Remarks
Q4171	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q4171	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q5301	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q5301	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q5901	2SD225900A	TRANSISTOR SI NPN	
Q5901	2SD1858-RTV2	TRANSISTOR SI NPN	
Q6001	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q6001	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q6002	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6002	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6003	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6003	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6004	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q6004	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q6005	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q6005	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q6006	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q6006	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q6009	VEKS5707	PHOTO SENSOR UNIT	
Q6010	VEKS5707	PHOTO SENSOR UNIT	



## DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D401	B0EAKL000049	DIODE SI	
D401	B0EAKL000044	DIODE SI	
D401	B0EAKL000045	DIODE SI	
D502	MA2C165001VT	DIODE SI	
D502	B0AACK000004	DIODE SI	
D502	1SS119	DIODE SI	
D503	ERB43-04V	DIODE SI	
D503	B0HAJP000012	DIODE SI	
D504	MAZ40470MF	DIODE ZENER 4.7V	
D504	MAZ40470HF	DIODE ZENER 4.7V	
D504	RD4.7ESAB	DIODE ZENER 4.7V	
D504	RD4.7ESAB2	DIODE ZENER 4.7V	
D504	04AZ4.7ZTPA7	DIODE ZENER 4.7V	
D507	MA2C165001VT	DIODE SI	
D507	B0AACK000004	DIODE SI	
D507	1SS119	DIODE SI	
D553	ERB43-04V	DIODE SI	
D553	B0HAJP000012	DIODE SI	
D554	4148-TA	DIODE SI	
D554	MA2C16700E	DIODE SI	
D558	ERB43-04V	DIODE SI	
D558	B0HAJP000012	DIODE SI	
D560	ERB44-04V	DIODE SI	
D571	MAZ40470MF	DIODE ZENER 4.7V	
D571	B0BA4R600003	DIODE ZENER 4.7V	
D571	RD4.7ESAB2	DIODE ZENER 4.7V	
D572	MA4110N-H	DIODE ZENER 11V	
D573	MA2C165001VT	DIODE SI	
D573	B0AACK000004	DIODE SI	






Ref. No.	Part No.	Part Name & Description	Remarks
D573	1SS119	DIODE SI	
D574	MA2C165001VT	DIODE SI	
D574	B0AACK000004	DIODE SI	
D574	1SS119	DIODE SI	
D582	B0HAPV000005	DIODE SI	
D591	D4DDF5R00005	THERMISTOR	
D591	LSRPAF4HM3R0	THERMISTOR	
D801	B0AAKT000010	DIODE SI	
D801	B0EAKT000007	DIODE SI	
D801	B0EAKT000027	DIODE SI	
D802	B0AAKT000010	DIODE SI	
D802	B0EAKT000007	DIODE SI	
D802	B0EAKT000027	DIODE SI	
D803	B0AAKT000010	DIODE SI	
D803	B0EAKT000007	DIODE SI	
D803	B0EAKT000027	DIODE SI	
D804	B0AAKT000010	DIODE SI	
D804	B0EAKT000007	DIODE SI	
D804	B0EAKT000027	DIODE SI	
D805	MA2C16700E	DIODE SI	
D805	4148-TA	DIODE SI	
D881	ERZV10V361CS	SURGE ABSORBER	
D881	D4EAA3610001	SURGE ABSORBER	
D882	ERZV10V361CS	SURGE ABSORBER	
D882	D4EAA3610001	SURGE ABSORBER	
D1001	DB105G	DIODE SI	
D1001	B0EBKR000003	DIODE SI	
D1001	B0EBKR000006	DIODE SI	
D1001	B0EBKR000020	DIODE SI	
D1002	B0HAHP000014	DIODE SI	
D1002	B0HAJP000007	DIODE SI	
D1002	B0HAMP000061	DIODE SI	
D1003	B0HAHP000014	DIODE SI	
D1003	B0HAJP000007	DIODE SI	
D1003	B0HAMP000061	DIODE SI	
D1005	B0HAHP000014	DIODE SI	
D1005	B0HAJP000007	DIODE SI	
D1005	B0HAMP000061	DIODE SI	
D1006	ERC30-01L3	DIODE SI	
D1006	B0HANL000012	DIODE SI	
D1008	ERB81-004V1	DIODE SI	
D1008	B0JAME000010	DIODE SI	
D1008	B0JAME000049	DIODE SI	
D1008	B0JANE000011	DIODE SI	
D1015	MA2180LA	DIODE ZENER 18V	
D1015	1N4746A-T	DIODE ZENER 18V	











Ref. No.	Part No.	Part Name & Description	Remarks
D1015	1N4746ARL	DIODE ZENER 18V	
D1016	MA2C165001VT	DIODE SI	
D1016	B0AACK000004	DIODE SI	
D1016	1SS119	DIODE SI	
D1051	MA4110N-H	DIODE ZENER 11V	
D4171	MA2C165001VT	DIODE SI	
D4171	B0AACK000004	DIODE SI	
D4171	1SS119	DIODE SI	
D4526	MAZ40560MF	DIODE ZENER 5.6V	
D4711	MA4110-LTA	DIODE ZENER 11V	
D4711	MA4110N-H	DIODE ZENER 11V	
D5501	MA4062-L	DIODE ZENER 6.2V	
D5602	MA2C165001VT	DIODE SI	
D5602	B0AACK000004	DIODE SI	
D5602	1SS119	DIODE SI	
D5603	MA2C165001VT	DIODE SI	
D5603	B0AACK000004	DIODE SI	
D5603	1SS119	DIODE SI	
D6001	VEKS5708	SENSOR LED UNIT	
D6003	MA2C165001VT	DIODE SI	
D6003	B0AACK000004	DIODE SI	
D6003	1SS119	DIODE SI	
D6005	MA2C165001VT	DIODE SI	
D6005	B0AACK000004	DIODE SI	
D6005	1SS119	DIODE SI	
D6301	B3AAA0000538	LIGHT EMITTING DIODE RED	
D6302	B3ACA0000192	LIGHT EMITTING DIODE ORANGE	
D6303	B3ABA0000400	LIGHT EMITTING DIODE GREEN	

## RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R401	ERDS2TJ181T	CARBON 1/4W 180	
R402	ERDS2TJ333T	CARBON 1/4W 33K	
R405	ERG2ANJ561H	METAL OXIDE 2W 560	
R409	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R410	ERDS2TJ472	CARBON 1/4W 4.7K	
R411	ERDS2TJ104	CARBON 1/4W 100K	
R413	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R414	ERX12SJR82P	PRECISION METAL FILM 1/2W 0.82	
R422	ERD25FJ101P	CARBON 1/4W 100	
R427	ERQ14AJ5R6P	FUSE 1/4W 5.6	
R431	ERDS2TJ103	CARBON 1/4W 10K	
R432	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R433	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R434	ERDS2TJ103	CARBON 1/4W 10K	
R435	ERDS2TJ102	CARBON 1/4W 1K	
R436	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R466	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R468	ERDS2TJ102	CARBON 1/4W 1K	
R471	ERDS1FJ152P	CARBON 1/2W 1.5K	
R472	ERDS2TJ332	CARBON 1/4W 3.3K	




Ref. No.	Part No.	Part Name & Description	Remarks
R501	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R502	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R503	ER0S2THF9101	PRECISION METAL FILM 1/4W 9.1K	
R503	ER0S2TKF9101	PRECISION METAL FILM 1/4W 9.1K	
R503	VRESR4TF9101	PRECISION METAL FILM 1/4W 9.1K	
R504	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R505	ERDS2TJ561	CARBON 1/4W 560	
R509	ERDS2TJ101	CARBON 1/4W 100	
R511	ERG3FJ272H	METAL OXIDE 3W 2.7K	
R516	LAR05222J09	W FLMPRF 5W 2.2K	
R517	ERDS2TJ472	CARBON 1/4W 4.7K	
R518	ERDS1FJ1R0P	CARBON 1/2W 1	
R519	ERDS2TJ123	CARBON 1/4W 12K	
R520	ERDS2TJ562	CARBON 1/4W 5.6K	
R525	ERDS2TJ122	CARBON 1/4W 1.2K	
R529	ERDS2TJ103	CARBON 1/4W 10K	
R531	ERDS2TJ223	CARBON 1/4W 22K	
R533	ERDS2TJ332	CARBON 1/4W 3.3K	
R534	ERDS2TJ681	CARBON 1/4W 680	
R535	ERDS2TJ471	CARBON 1/4W 470	
R536	ERG2ANJ153H	METAL OXIDE 2W 15K	
R537	ERG2ANJ153H	METAL OXIDE 2W 15K	
R538	ERDS2TJ473	CARBON 1/4W 47K	
R539	ERDS2TJ473	CARBON 1/4W 47K	
R540	ERDS2TJ562	CARBON 1/4W 5.6K	
R541	ERDS2TJ222	CARBON 1/4W 2.2K	
R542	ERDS2TJ473	CARBON 1/4W 47K	
R543	ERDS2TJ102	CARBON 1/4W 1K	
R544	ERDS2TJ101	CARBON 1/4W 100	
R545	ERDS2TJ152	CARBON 1/4W 1.5K	
R546	ERDS2TJ223	CARBON 1/4W 22K	
R552	ERDS2TJ472	CARBON 1/4W 4.7K	
R553	ERDS2TJ102	CARBON 1/4W 1K	
R554	ERDS2TJ103	CARBON 1/4W 10K	
R555	ERDS2TJ823	CARBON 1/4W 82K	
R556	ERDS2TJ473	CARBON 1/4W 47K	
R558	ERG2ANJ102H	METAL OXIDE 2W 1K	
R559	ERDS2TJ822	CARBON 1/4W 8.2K	
R561	ERQ2CKPR82S	FUSE 2W 0.82	
R562	ERF5ZK2R2	W FLMPRF 5W 2.2	
R571	ERDS2TJ101	CARBON 1/4W 100	
R572	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R573	ERDS2TJ221	CARBON 1/4W 220	
R574	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R581	ERDS1FJ1R5P	CARBON 1/2W 1.5	
R582	ERDS1FJ1R2P	CARBON 1/2W 1.2	
R583	ERDS1FJ1R5P	CARBON 1/2W 1.5	
R584	ERDS2TJ562	CARBON 1/4W 5.6K	
R585	ERDS2TJ473	CARBON 1/4W 47K	
R586	ERDS2TJ393	CARBON 1/4W 39K	
R591	ERF5ZJ121	W FLMPRF 5W 120	



Ref. No.	Part No.	Part Name & Description	Remarks
R801	ERF5ZKR82	W FLMPRF 5W 0.82	⚠
R802	ERDS1FJ103P	CARBON 1/2W 10K	⚠
R802	ERDS1FPJ103	CARBON 1/2W 10K	⚠
R803	ERF10ZK8R2S	W FLMPRF 10W 8.2	
R804	ERF20ZJ131	W FLMPRF 20W 130	
R805	ERDS2TJ104	CARBON 1/4W 100K	
R806	ERQ14AJ470P	FUSE 1/4W 47	⚠
R810	ERDS2TJ103	CARBON 1/4W 10K	
R813	ERDS2TJ104	CARBON 1/4W 100K	
R818	VRESC2TK825T	SOLID 1/2W 8.2M	⚠
R818	VRESC2TK825T	SOLID 1/2W 8.2M	⚠
R865	ERDS2TJ222	CARBON 1/4W 2.2K	
R1003	D0AF334JA038	CARBON 1/2W 330K	
R1004	ERG2SJ333H	METAL OXIDE 2W 33K	
R1005	ERG1SJ560P	METAL OXIDE 1W 56	
R1006	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1007	ERDS2TJ101	CARBON 1/4W 100	
R1008	ERDS2TJ392	CARBON 1/4W 3.9K	
R1010	ERD25FJ100P	CARBON 1/4W 10	⚠
R1010	ERD25FPJ100P	CARBON 1/4W 10	⚠
R1010	VRESF4FJ100P	CARBON 1/4W 10	⚠
R1014	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1016	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R1017	D1BD2431A016	MGF CHIP 2.43 K	
R1018	D0HD222ZA002	MGF CHIP 2.2K	
R1025	ERDS2TJ300T	CARBON 1/4W 30	
R1026	ERDS2TJ300T	CARBON 1/4W 30	
R1051	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R1052	ERDS2TJ153	CARBON 1/4W 15K	
R1053	ERDS2TJ153	CARBON 1/4W 15K	
R1057	ERDS2TJ331	CARBON 1/4W 330	
R1058	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R3001	ERDS2TJ101	CARBON 1/4W 100	
R3006	ERDS2TJ101	CARBON 1/4W 100	
R3016	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3017	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3024	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R3025	ERJ6GEYJ125V	MGF CHIP 1/10W 1.2M	
R3026	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R3028	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R3029	ERJ6GEYJ151V	MGF CHIP 1/10W 150	
R3032	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3035	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3036	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3037	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3038	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3044	ERJ6GEYG562V	MGF CHIP 1/10W 5.6K ( G )	
R3045	ERJ6GEYG222V	MGF CHIP 1/10W 2.2K ( G )	
R3047	ERJ6GEYG102V	MGF CHIP 1/10W 1K ( G )	
R3077	ERJ6GEYJ101V	MGF CHIP 1/10W 100	




Ref. No.	Part No.	Part Name & Description	Remarks
R3084	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3086	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R3091	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3301	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3302	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R3303	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4002	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R4003	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R4004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4005	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R4006	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R4007	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R4008	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R4009	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4010	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4011	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4012	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4018	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K ( G )	
R4018	ERJ6GEYJ123V	MGF CHIP 1/10W 12K ( H )	
R4021	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4101	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R4102	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R4103	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4172	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4175	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4502	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4504	ERJ6GEYJ823V	MGF CHIP 1/10W 82K	
R4509	ERDS2TJ100	CARBON 1/4W 10	
R4521	ERQ1ABJP4R7S	FUSE 1W 4.7	
R4523	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4524	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4591	ERDS2TJ681	CARBON 1/4W 680	
R4592	ERDS2TJ681	CARBON 1/4W 680	
R4593	ERDS2TJ681	CARBON 1/4W 680	
R4594	ERDS2TJ681	CARBON 1/4W 680	
R4701	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5301	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5304	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R5305	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R5306	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5308	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R5309	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R5311	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5312	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5313	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5314	ERDS2TJ272	CARBON 1/4W 2.7K	
R5315	ERDS2TJ272	CARBON 1/4W 2.7K	
R5316	ERDS2TJ272	CARBON 1/4W 2.7K	
R5317	ERDS2TJ101	CARBON 1/4W 100	
R5324	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5401	ERJ6GEYJ561V	MGF CHIP 1/10W 560	







Ref. No.	Part No.	Part Name & Description	Remarks
R5402	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R5403	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5405	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R5406	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5501	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5502	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R5503	ERDS2TJ471	CARBON 1/4W 470	
R5504	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5505	ERJ6ENF3241V	MGF CHIP 1/10W 3.24K	
R5506	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R5508	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5510	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5511	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5512	ERDS2TJ151	CARBON 1/4W 150	
R5513	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5601	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R5604	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R5611	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5612	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5614	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R5902	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5932	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5933	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6002	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6003	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6004	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6005	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6007	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6008	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6014	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6016	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6017	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6018	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6019	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6021	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6022	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6023	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6024	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6025	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6026	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6028	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6029	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6030	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6032	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6035	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6040	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6041	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6042	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6043	ERJ6GEYJ102V	MGF CHIP 1/10W 1K ( H )	
R6044	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6045	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6046	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6049	ERJ6GEY0R00V	MGF CHIP 1/10W 0	



10000	100000000	100000000	100000000
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Ref. No.	Part No.	Part Name & Description	Remarks
R6050	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6053	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6054	ERJ6GEYJ102V	MGF CHIP 1/10W 1K ( H )	
R6055	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6056	ERJ6GEYJ102V	MGF CHIP 1/10W 1K ( H )	
R6057	ERJ6GEYJ102V	MGF CHIP 1/10W 1K ( H )	
R6058	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6059	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6060	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6061	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6062	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6063	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6064	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6066	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6067	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6077	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6078	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6080	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R6081	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R6082	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6084	ERJ6GEYJ273V	MGF CHIP 1/10W 27K ( H )	
R6090	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R6091	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R6092	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R6098	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6099	ERJ6GEYJ153V	MGF CHIP 1/10W 15K ( H )	
R6100	ERJ6GEYJ153V	MGF CHIP 1/10W 15K ( H )	
R6113	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6114	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R6115	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6116	ERDS2TJ101	CARBON 1/4W 100	
R6118	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6119	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6120	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6121	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6122	ERJ6GEYJ181V	MGF CHIP 1/10W 180	
R6123	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6124	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6126	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6127	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6130	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6131	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R6132	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R6133	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6134	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6135	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
R6136	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6137	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6138	ERDS2TJ560T	CARBON 1/4W 56	
R6142	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6143	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6144	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6145	ERJ6GEYJ273V	MGF CHIP 1/10W 27K ( H )	
R6146	ERJ6GEYJ273V	MGF CHIP 1/10W 27K ( G )	



Ref. No.	Part No.	Part Name & Description	Remarks
R6150	ERJ6GEYJ912V	MGF CHIP 1/10W 9.1K ( G )	
R6150	ERJ6GEYJ913V	MGF CHIP 1/10W 91K ( H )	
R6160	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6161	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6162	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6163	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6164	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6165	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6166	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6170	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6201	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6202	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6203	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R6204	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R6205	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6207	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6208	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R6209	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6210	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6211	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6212	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R6301	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6302	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6303	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6304	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6305	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6306	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6307	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6316	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R7001	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7002	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7003	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7004	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7006	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R7007	ERDS2TJ102	CARBON 1/4W 1K	
R9023	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	

## CAPACITORS



Ref. No.	Part No.	Part Name & Description	Remarks
C401	ECEA1HGE2R2	ELECTROLYTIC 50V 2.2UF	
C402	ECA1CM471B	ELECTROLYTIC 16V 470UF	
C408	ECA1HGE010KB	ELECTROLYTIC 50V 1UF	
C409	ECA1VM221B	ELECTROLYTIC 35V 220UF	
C413	ECQB1H104KF	POLYESTER 50V 0.1UF	
C414	ECA1VM102B	ELECTROLYTIC 35V 1000UF	
C418	ECA1VM221B	ELECTROLYTIC 35V 220UF	
C458	ECQB1H103KM	POLYESTER 50V 0.01UF	
C510	ECKR2H681KB5	CERAMIC 500V 680PF	
C513	ECA1HM470B	ELECTROLYTIC 50V 47UF	
C524	ECKC3D821KBP	CERAMIC 2KV 820PF	⚠
C524	ECKW3D821KBP	CERAMIC 2KV 820PF	⚠
C531	ECA1HM3R3B	ELECTROLYTIC 50V 3.3UF	
C533	ECA1EM101B	ELECTROLYTIC 25V 100UF	
C534	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C552	ECA1EM471B	ELECTROLYTIC 25V 470UF	
C553	ECKR2H471KB5	CERAMIC 500V 470PF	
C554	ECWH12H682JS	POLYESTER 120V 6800PF	⚠
C554	ECWH16682JVB	POLYESTER 1250V 6800PF	⚠
C556	ECWF2474JBB	POLYESTER 250V 0.47UF	⚠
C556	ECWF2474JSB	POLYESTER 250V 0.47UF	⚠
C556	LSCFM2474JM	POLYESTER 250V 0.47UF	⚠
C558	ECA1VM331B	ELECTROLYTIC 35V 330UF	
C560	ECA2EM100B	ELECTROLYTIC 250V 10UF	⚠
C561	ECA1HM2R2B	ELECTROLYTIC 50V 2.2UF	
C563	ECEA180V33WE	ELECTROLYTIC 180V 33UF	
C571	ECA1HM3R3B	ELECTROLYTIC 50V 3.3UF	
C572	ECA1CM221B	ELECTROLYTIC 16V 220UF	
C573	ECKR2H122KB5	CERAMIC 50V 1200PF	
C581	ECWH12H682JS	POLYESTER 120V 6800PF	
C801	VCKSRNG472ZX	CERAMIC 250V 4700PF	
C802	VCKSRNG472ZX	CERAMIC 250V 4700PF	
C803	VCKSRNG472ZX	CERAMIC 250V 4700PF	
C804	VCKSRNG472ZX	CERAMIC 250V 4700PF	
C805	ECOS2DP681BB	ELECTROLYTIC 220V 680UF	⚠
C806	ECA2EM330E	ELECTROLYTIC 250V 33UF	
C807	J0LE00000023	ARRESTER	⚠
C808	ECQU2A823MLA	POLYESTER 250V 0.082UF	⚠
C808	LSCFQ2A823MC	POLYESTER 250V 0.082UF	⚠
C809	F1B2E101A009	CERAMIC 250V 100PF	⚠
C809	F1B2E101A008	CERAMIC 250V 100PF	⚠
C809	F1B2E101A032	CERAMIC 250V 100PF	⚠
C809	F1B2E101A037	CERAMIC 250V 100PF	⚠
C811	F1B2E152A012	CERAMIC 250V 1500PF	⚠
C811	F1B2E152A011	CERAMIC 250V 1500PF	⚠
C811	F1B2E152A044	CERAMIC 250V 1500PF	⚠
C811	F1B2E152A045	CERAMIC 250V 1500PF	⚠



Ref. No.	Part No.	Part Name & Description	Remarks
C811	F1B2E1520002	CERAMIC 250V 1500PF	⚠
C811	F1B2E1520006	CERAMIC 250V 1500PF	⚠
C1001	ECKATS103MF	CERAMIC 250V 0.01UF	⚠
C1001	ECKETS103MF	CERAMIC 125V 0.01UF	⚠
C1001	VCKST3G103MY	CERAMIC 250V 0.01UF	⚠
C1001	VCKSU3D103MY	CERAMIC 125V 0.01UF	⚠
C1002	ECKATS332ME8	CERAMIC 250V 3300PF	⚠
C1002	ECKDNB332ME8	CERAMIC 125V 3300PF	⚠
C1002	ECKETS332ME8	CERAMIC 125V 3300PF	⚠
C1002	VCKST3G332MX	CERAMIC 250V 3300PF	⚠
C1002	VCKSU3D332MX	CERAMIC 125V 3300PF	⚠
C1003	F1B2E102A012	CERAMIC 250V 1000PF	⚠
C1003	F1B2E102A011	CERAMIC 250V 1000PF	⚠
C1003	F1B2E102A044	CERAMIC 250V 1000PF	⚠
C1003	F1B2E102A045	CERAMIC 250V 1000PF	⚠
C1003	F1B2E1020005	CERAMIC 250V 1000PF	⚠
C1003	F1B2E1020006	CERAMIC 250V 1000PF	⚠
C1004	ECEA2DU121YE	ELECTROLYTIC 200V 120UF	⚠
C1004	F2A2D1210001	ELECTROLYTIC 200V 120UF	⚠
C1004	F2A2D1210003	ELECTROLYTIC 200V 120UF	⚠
C1004	VCESR2D121XE	ELECTROLYTIC 200V 120UF	⚠
C1005	ECA2DHG4R7B	ELECTROLYTIC 200V 4.7UF	
C1006	ECKR2H221KB5	CERAMIC 500V 220PF	
C1007	ECJ2VB1C224K	CERAMIC 16V 0.22UF	
C1009	VCYSBRE183KX	CERAMIC 25V 0.018UF	
C1010	ECJ2VB1H102K	C CHIP 50V 1000PF	
C1011	ECA1HHG470B	ELECTROLYTIC 50V 47UF	
C1012	ECEA1PEE331	ELECTROLYTIC 18V 330UF	
C1013	ECA1EM331B	ELECTROLYTIC 25V 330UF	
C1016	ECEA1PEE331	ELECTROLYTIC 18V 330UF	
C1017	ECA0JM102B	ELECTROLYTIC 6.3V 1000UF	
C1018	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C1025	F1B2E101A009	CERAMIC 250V 100PF	⚠
C1025	F1B2E101A008	CERAMIC 250V 100PF	⚠
C1025	F1B2E101A032	CERAMIC 250V 100PF	⚠
C1025	F1B2E101A037	CERAMIC 250V 100PF	⚠
C1029	ECJ2VC1H101J	C CHIP 50V 100PF	
C1030	VCYSBRE183KX	CERAMIC 25V 0.018UF	
C1051	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C1052	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C1058	ECEA0JEE101	ELECTROLYTIC 6.3V 100UF	
C1059	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C1060	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C3003	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3004	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3006	ECJ2VF1E104Z	C CHIP 25V 0.1UF	



Ref. No.	Part No.	Part Name & Description	Remarks
C3007	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C3008	ECJ2VC1H181J	C CHIP 50V 180PF	
C3009	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C3010	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3013	ECJ2VF1C224Z	C CHIP 16V 0.22UF	
C3015	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C3016	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3019	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3020	ECEA1CKA220	ELECTROLYTIC 16V 22UF	
C3021	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3022	ECJ2VF1C224Z	C CHIP 16V 0.22UF	
C3023	ECJ2VC1H680J	C CHIP 50V 68PF	
C3024	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3025	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C3026	ECJ2VB1H822K	C CHIP 50V 8200PF	
C3027	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3030	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3031	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3032	ECJ2VF1C474Z	C CHIP 16V 0.47UF	
C3034	ECJ2VC1H181J	C CHIP 50V 180PF	
C3035	ECJ2VC1H330J	C CHIP 50V 33PF	
C3036	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3038	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3041	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3043	ECJ2VB1H392K	C CHIP 50V 3900PF	
C3044	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3045	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C3046	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3047	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C3048	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3050	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3053	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3055	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3056	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3057	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3058	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3082	ECJ2VB1H332K	C CHIP 50V 3300PF	
C3231	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C3232	ECJ2VB1H102K	C CHIP 50V 1000PF	
C3234	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C3235	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3236	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3237	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C4001	ECJ2VF1C224Z	C CHIP 16V 0.22UF	
C4002	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4003	ECJ2VB1H272K	C CHIP 50V 2700PF	
C4004	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4005	ECEA0JKA220	ELECTROLYTIC 6.3V 22UF	
C4006	ECJ2VB1H102K	C CHIP 50V 1000PF	
C4007	ECEA0JKA220	ELECTROLYTIC 6.3V 22UF	
C4008	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C4009	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4010	ECJ2VB1E333K	C CHIP 25V 0.033UF	
C4011	ECJ2VB1H103K	C CHIP 50V 0.01UF	












Ref. No.	Part No.	Part Name & Description	Remarks
C4012	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4013	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C4014	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4018	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4020	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4102	ECQB1562JF3	POLYESTER 100V 5600PF	
C4103	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4104	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4105	ECEA1CKA220	ELECTROLYTIC 16V 22UF	
C4171	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4502	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4504	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4506	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C4508	ECA1CM221B	ELECTROLYTIC 16V 220UF	
C4509	ECJ2VB1E473K	C CHIP 25V 0.047UF	
C4521	ECA1EM102B	ELECTROLYTIC 25V 1000UF	
C4524	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5301	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5302	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C5303	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C5305	ECEA1HKAR33	ELECTROLYTIC 50V 0.33UF	
C5306	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5307	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5308	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5401	VCUSTBC224KB	C CHIP 16V 0.22UF	
C5402	ECJ2VB1H222K	C CHIP 50V 2200PF	
C5403	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C5501	ECJ2VB1E183K	C CHIP 25V 0.018UF	
C5502	ECJ2VB1H681K	C CHIP 50V 680PF	
C5505	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C5506	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5507	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5508	ECUV1H221JSN	C CHIP 50V 220PF	
C5510	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C5511	ECJ2VB1E333K	C CHIP 25V 0.033UF	
C5516	ECJ2VB1E333K	C CHIP 25V 0.033UF	
C5601	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5602	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C5603	ECJ2VC1H150J	C CHIP 50V 15PF	
C5604	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C5605	ECJ2VB1E153K	C CHIP 25V 0.015UF	
C5902	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C5903	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C5904	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5905	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C5906	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5932	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C6001	ECEA0JKA331	ELECTROLYTIC 6.3V 330UF	
C6002	ECJ2VC1H080C	C CHIP 50V 8PF	
C6003	ECJ2VC1H100C	C CHIP 50V 10PF	
C6004	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C6006	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6009	ECEA1CKS100	ELECTROLYTIC 16V 10UF	
C6013	ECJ2VC1H101J	C CHIP 50V 100PF	



Ref. No.	Part No.	Part Name & Description	Remarks
C6017	ECJ2VC1H101J	C CHIP 50V 100PF	
C6018	ECJ2VC1H101J	C CHIP 50V 100PF	
C6020	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6021	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6023	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C6025	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C6029	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6040	ECJ2VB1H102K	C CHIP 50V 1000PF	
C6041	ECJ2VB1H102K	C CHIP 50V 1000PF	
C6044	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C6201	ECJ2VB1H102K	C CHIP 50V 1000PF	
C6202	ECJ2VB1E103K	C CHIP 25V 0.01UF	
C6203	ECJ2VB1H332K	C CHIP 50V 3300PF	
C6204	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C6207	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6208	ECEA1CKS100	ELECTROLYTIC 16V 10UF	
C6209	ECJ2VB1H102K	C CHIP 50V 1000PF	
C6212	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6213	ECEA0JKS331I	ELECTROLYTIC 6.3V 330UF	
C6214	ECEA0JKS220	ELECTROLYTIC 6.3V 22UF	
C6215	ECJ2VB1H272K	C CHIP 50V 2700PF	
C6216	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C6220	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C6221	ECEA0JKA221	ELECTROLYTIC 6.3V 220UF	
C6302	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6401	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6402	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6403	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C6404	ECJ2VC1H121J	C CHIP 50V 120PF	
C6406	ECEA1HKS010	ELECTROLYTIC 50V 1UF	
C6408	ECJ2VB1H222K	C CHIP 50V 2200PF	
C6410	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C7002	ECJ2VB1H102K	C CHIP 50V 1000PF	
C7006	ECA0JM102B	ELECTROLYTIC 6.3V 1000UF	
C7007	ECJ2VB1H102K	C CHIP 50V 1000PF	
C7008	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C7010	ECEA1HKA010	ELECTROLYTIC 50V 1UF	

## COILS



Ref. No.	Part No.	Part Name & Description	Remarks
L501	ELH5L6128	COIL	
L553	VLQSW07D220M	COIL 22UH	
L802	VLQSAE8D220M	COIL 22UH	
L803	ELF21V018A	LINE NOISE FILTER	
L803	LLN63055A	COIL	
L1001	ELF15N005A	LINE FILTER 0.5A 18MH	
L1001	ELF18D290A	LINE FILTER 0.5A 18MH	
L1001	G0B183D00001	LINE FILTER 0.5A 18MH	
L1001	J0HBLD000001	LINE FILTER 0.5A 18MH	
L1001	VLQS0167	LINE FILTER 0.5A 18MH	
L1001	VLQS0170	LINE FILTER 0.6A 18MH	
L1002	VLQSAB7D220K	COIL 22UH	
L1003	VLQSAB7D100K	COIL 10UH	
L1006	J0JHB0000021	FILTER	
L1007	G0C101KA0045	COIL 100UH	
L3001	G0C390KA0045	COIL 39UH	
L3002	ELESN101KA	COIL 100UH	
L3005	G0C330KA0045	COIL 33UH	
L3010	ELESN470KA	COIL 47UH	
L3231	ELESN221KA	COIL 220UH	
L4001	ELELN153KA	COIL 15MH	
L4002	ELESN101KA	COIL 100UH	
L4004	G0C220KA0045	COIL 22UH	
L4101	ELESN471KA	COIL 470UH	
L5901	ELESN101KA	COIL 100UH	
L5902	ELESN470KA	COIL 47UH	
L6201	ELEXT101KE04	COIL 100UH	
L6401	ELEXT101KE04	COIL 100UH	
L6402	J0JBC0000022	CHIP BEAD INDUCTOR	
L6403	J0JBC0000022	CHIP BEAD INDUCTOR	
L6404	J0JBC0000022	CHIP BEAD INDUCTOR	
L6405	J0JBC0000022	CHIP BEAD INDUCTOR	
L7002	ELESN100KA	COIL 10UH	

### CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X5501	H2A503300012	CRYSTAL OSCILLATOR	
X5601	VSXS0190-TB	CRYSTAL OSCILLATOR	
X6001	VSXS0784	CRYSTAL OSCILLATOR	

### PIN HEADERS

















Ref. No.	Part No.	Part Name & Description	Remarks
P552	LSJWS4N360LL	PIN HEADER	
P801	VEKS5809	CONNECTOR CABLE W/OUT PLUG, 200V	
P803	LSJP0814	CONNECTOR 2P	
P3001	K1KA08A00305	CONNECTOR 8PIN ( G )	
P3001	K1KA12A00232	CONNECTOR 12PIN ( H )	
P4001	VJSS0888	FE CONNECTOR 2P	
P4002	LSJWR6N120CL	PARALLEL WIRE	
P4591	K1KA02A00229	CONNECTOR 2P	
P5301	LSJWR4N490LL	CONNECTOR CABLE W/OUT PLUG,12V DC	
P6001	K1KA05A00177	CONNECTOR 5P	
P6201	K1KA12A00234	PIN HEADER	

## SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6001	LSSH0002	LEAF SWITCH-SAFETY TAB	
SW6002	LSSS0008	MODE SWITCH	
SW6301	EVQ21405R	PUSH SWITCH	
SW6302	EVQ21405R	PUSH SWITCH	
SW6303	EVQ21405R	PUSH SWITCH	
SW6304	EVQ21405R	PUSH SWITCH	
SW6305	EVQ21405R	PUSH SWITCH	
SW6306	EVQ21405R	PUSH SWITCH	
SW6307	EVQ21405R	PUSH SWITCH	
SW6308	EVQ21405R	PUSH SWITCH	
SW6309	EVQ21405R	PUSH SWITCH	
SW6310	EVQ21405R	PUSH SWITCH	
SW6311	EVQ21405R	PUSH SWITCH	

## FUSE& PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F801	K5D402AB0002	FUSE 125V 4A	
F801	K5D402ADA002	FUSE 125V 4A	
F801	K5D402AQ0002	FUSE 125V 4A	
F801	VSFS0003A40	FUSE 125V 4A	
F1001	VSFS0003A16	FUSE 125V 1.6A	
F1001	K5D162AB0003	FUSE 125V 1.6A	
F1001	K5D162ADA001	FUSE 125V 1.6A	
F1001	K5D162AQ0004	FUSE 125V 1.6A	
PR1001	UNH000600A	IC PROTECTOR 1.5A	
PR1001	B1ZAZ0000040	IC PROTECTOR 1.5A	
PR1001	LSSF009A25E	IC PROTECTOR 1.5A	
PR1002	UNH000600A	IC PROTECTOR 1.5A	
PR1002	B1ZAZ0000040	IC PROTECTOR 1.5A	
PR1002	LSSF009A25E	IC PROTECTOR 1.5A	

## RELAY



Ref. No.	Part No.	Part Name & Description	Remarks
RL801	LSSY0004	RELAY	⚠
RL801	K6B1AGA00042	RELAY,120V	⚠
RL801	TSEH0013	RELAY	⚠
RL801	TSEH1860-1	RELAY	⚠
RL801	TSEH8007	RELAY,120V	⚠

### TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T501	ETH19Y70AY	TRANSFORMER	
T551	KFT4AB407F	FLYBACK TRANSFORMER	⚠
T1001	ETS28AD2J3AC	SW TRANSFORMER	⚠
T1001	ETS28AD2J3NC	TRANSFORMER	⚠
T1001	LSTP0105	TRANSFORMER	⚠
T1001	LSTP0105-1	TRANSFORMER	⚠
T1001	VTPS0042	SW TRANSFORMER	⚠
T1001	VTPS0042-1	SW TRANSFORMER	⚠
T4101	VLTS0304	TRANSFORMER	

### JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK4591	K2HC103B0130	FRONT AUDIO/VIDEO JACK SOCKET	
JK4701	K2HA204B0114	EARPHONE JACK SOCKET	

### MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
483	XYN3+F10S	SCREW W/WASHER,STEEL	
484	XTW3+10J	TAPPING SCREW,STEEL	
711	PNA4611M00HC	INFRARED RECEIVER UNIT	
719	VMFS0136	SHEET,NYLON-RAYON	
728	LUS63008A	HEAT SINK	
743	ENG36706GD	TUNER,UHF/VHF NR ( G )	
743	ENG36709GD	TUNER,UHF/VHF NR ( H )	
746	LUS63001A	HEAT SINK	
751	LML69001A	ANODE LEAD CLAMPER	
760	TUC77628	HEAT SINK	
771	EYF52BC	FUSE HOLDER	

### 12.3.3. HEAD AMP C.B.A.

( Model: A,B,D,E,F,G )



**COMPARISON CHART OF MODELS & MARKS**

MODEL	MARK	MODEL	MARK
PVQ-1312W	A	VV-2002	E
PV-C1322-K	B	PV-C2022-K	F
PV-C1352W-K	C	PVQ-2512	G
PVQ-2012	D	PV-C2542	H

**INTEGRATED CIRCUITS**

Ref. No.	Part No.	Part Name & Description	Remarks
IC3501	AN3371SB	IC, LINEAR	

**RESISTORS**

Ref. No.	Part No.	Part Name & Description	Remarks
R3507	ERJ6GEYJ331V	MGF CHIP 1/10W 330	

**CAPACITORS**

Ref. No.	Part No.	Part Name & Description	Remarks
C3504	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3505	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C3506	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3508	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3511	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3512	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3513	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3528	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3529	ECJ2VF1H103Z	C CHIP 50V 0.01UF	

**COILS**

Ref. No.	Part No.	Part Name & Description	Remarks
L3501	G0C101KA0045	COIL 100UH	

Ref. No.	Part No.	Part Name & Description	Remarks
P3501	K1KB08B00050	CONNECTOR 8P	

Ref. No.	Part No.	Part Name & Description	Remarks
P3501	K1KB08B00050	CONNECTOR 8P	

**12.3.4. HEAD AMP C.B.A.**

( Model: C,H )

**COMPARISON CHART OF MODELS & MARKS**

MODEL	MARK	MODEL	MARK
PVQ-1312W	A	VV-2002	E
PV-C1322-K	B	PV-C2022-K	F
PV-C1352W-K	C	PVQ-2512	G
PVQ-2012	D	PV-C2542	H



### INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC3501	AN3361SB	IC, LINEAR	

### RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R3501	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3502	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3503	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3504	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3505	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3506	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3507	ERJ6GEYJ561V	MGF CHIP 1/10W 560	

### CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C3504	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3505	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C3506	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3507	ECJ2VB1H102K	C CHIP 50V 1000PF	
C3508	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3511	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3512	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3513	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3519	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3520	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3523	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3524	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3528	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3529	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3532	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3533	ECJ2VF1H103Z	C CHIP 50V 0.01UF	

### COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L3501	G0C101KA0045	COIL 100UH	

### PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P3501	K1KB12B00044	CONNECTOR 12P	

## 12.3.5. CRT C.B.A.

( Model: A,B,C )



#### COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PVQ-1312W	A	VV-2002	E
PV-C1322-K	B	PV-C2022-K	F
PV-C1352W-K	C	PVQ-2512	G
PVQ-2012	D	PV-C2542	H

#### TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q351	2SC14730Q	TRANSISTOR SI NPN	
Q351	B1AACN000014	TRANSISTOR SI NPN	
Q351	B1BAAN000029	TRANSISTOR SI NPN	
Q351	2SC1473A-Q	TRANSISTOR SI NPN	
Q352	2SC14730Q	TRANSISTOR SI NPN	
Q352	B1AACN000014	TRANSISTOR SI NPN	
Q352	B1BAAN000029	TRANSISTOR SI NPN	
Q352	2SC1473A-Q	TRANSISTOR SI NPN	
Q353	2SC14730Q	TRANSISTOR SI NPN	
Q353	B1AACN000014	TRANSISTOR SI NPN	
Q353	B1BAAN000029	TRANSISTOR SI NPN	
Q353	2SC1473A-Q	TRANSISTOR SI NPN	

#### RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R351	ERG1ANJ153H	METAL OXIDE 1W 15K	
R352	ERG1ANJ153H	METAL OXIDE 1W 15K	
R353	ERG1ANJ153H	METAL OXIDE 1W 15K	
R354	ERD25TJ272	CARBON 1/4W 2.7K	
R356	ERD25TJ272	CARBON 1/4W 2.7K	
R357	ERDS2TJ392	CARBON 1/4W 3.9K	
R358	ERDS2TJ392	CARBON 1/4W 3.9K	
R359	ERDS2TJ392	CARBON 1/4W 3.9K	
R360	ERDS2TJ391	CARBON 1/4W 390	
R361	ERDS2TJ391	CARBON 1/4W 390	
R362	ERDS2TJ391	CARBON 1/4W 390	
R363	ERDS2TJ181T	CARBON 1/4W 180	
R364	ERDS2TJ181T	CARBON 1/4W 180	
R365	ERDS2TJ181T	CARBON 1/4W 180	
R366	ERD25TJ272	CARBON 1/4W 2.7K	

#### CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C351	F1D1H391A012	CERAMIC 50V 390PF	
C352	F1D1H391A012	CERAMIC 50V 390PF	
C353	F1D1H471A012	CERAMIC 50V 470PF	
C354	F1B3D1020008	CERAMIC 2KV 1000PF	

#### PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P355	K3B08BA00006	CRT SOCKET	



## MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
153	TMM7443-1	CLAMPER	

## 12.3.6. CRT C.B.A.

( Model: D,E,F )

### COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PVQ-1312W	A	VV-2002	E
PV-C1322-K	B	PV-C2022-K	F
PV-C1352W-K	C	PVQ-2512	G
PVQ-2012	D	PV-C2542	H

## TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q351	2SC3063	TRANSISTOR SI NPN	
Q351	2SC3271F-N	TRANSISTOR SI NPN	
Q351	2SC3619	TRANSISTOR SI NPN	
Q352	2SC3063	TRANSISTOR SI NPN	
Q352	2SC3271F-N	TRANSISTOR SI NPN	
Q352	2SC3619	TRANSISTOR SI NPN	
Q353	2SC3063	TRANSISTOR SI NPN	
Q353	2SC3271F-N	TRANSISTOR SI NPN	
Q353	2SC3619	TRANSISTOR SI NPN	

## RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R351	ERG2ANJ153H	METAL OXIDE 2W 15K	
R352	ERG2ANJ153H	METAL OXIDE 2W 15K	
R353	ERG2ANJ153H	METAL OXIDE 2W 15K	
R354	ERD25TJ272	CARBON 1/4W 2.7K	
R355	ERD25TJ272	CARBON 1/4W 2.7K	
R356	ERD25TJ272	CARBON 1/4W 2.7K	
R357	ERDS2TJ392	CARBON 1/4W 3.9K	
R358	ERDS2TJ392	CARBON 1/4W 3.9K	
R359	ERDS2TJ392	CARBON 1/4W 3.9K	
R360	ERDS2TJ391	CARBON 1/4W 390	
R361	ERDS2TJ391	CARBON 1/4W 390	
R362	ERDS2TJ391	CARBON 1/4W 390	
R363	ERDS2TJ121	CARBON 1/4W 120	
R364	ERDS2TJ121	CARBON 1/4W 120	
R365	ERDS2TJ121	CARBON 1/4W 120	

## CAPACITORS



Ref. No.	Part No.	Part Name & Description	Remarks
C351	F1D1H471A012	CERAMIC 50V 470PF	
C352	F1D1H471A012	CERAMIC 50V 470PF	
C353	F1D1H561A012	CERAMIC 50V 560PF	
C354	F1B3D1020008	CERAMIC 2KV 1000PF	

### PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P353	LJP25007A	CRT SOCKET	

### MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
153	TMM7443-1	CLAMPER	

## 12.3.7. CRT C.B.A.

( Model: G,H )

### COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
PVQ-1312W	A	VV-2002	E
PV-C1322-K	B	PV-C2022-K	F
PV-C1352W-K	C	PVQ-2512	G
PVQ-2012	D	PV-C2542	H

### TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q351	2SC3063	TRANSISTOR SI NPN	
Q351	2SC3271F-N	TRANSISTOR SI NPN	
Q351	2SC3619	TRANSISTOR SI NPN	
Q352	2SC3063	TRANSISTOR SI NPN	
Q352	2SC3271F-N	TRANSISTOR SI NPN	
Q352	2SC3619	TRANSISTOR SI NPN	
Q353	2SC3063	TRANSISTOR SI NPN	
Q353	2SC3271F-N	TRANSISTOR SI NPN	
Q353	2SC3619	TRANSISTOR SI NPN	

### RESISTORS



Ref. No.	Part No.	Part Name & Description	Remarks
R351	ERG2ANJ153H	METAL OXIDE 2W 15K	
R352	ERG2ANJ153H	METAL OXIDE 2W 15K	
R353	ERG2ANJ153H	METAL OXIDE 2W 15K	
R354	ERD25TJ272	CARBON 1/4W 2.7K	
R355	ERD25TJ272	CARBON 1/4W 2.7K	
R356	ERD25TJ272	CARBON 1/4W 2.7K	
R357	ERDS2TJ332	CARBON 1/4W 3.3K	
R358	ERDS2TJ332	CARBON 1/4W 3.3K	
R359	ERDS2TJ332	CARBON 1/4W 3.3K	
R360	ERDS2TJ331	CARBON 1/4W 330	
R361	ERDS2TJ331	CARBON 1/4W 330	
R362	ERDS2TJ331	CARBON 1/4W 330	
R363	ERDS2TJ101	CARBON 1/4W 100	
R364	ERDS2TJ101	CARBON 1/4W 100	
R365	ERDS2TJ101	CARBON 1/4W 100	

### CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C351	F1D1H561A012	CERAMIC 50V 560PF	
C352	F1D1H561A012	CERAMIC 50V 560PF	
C353	F1D1H681A012	CERAMIC 50V 680PF	
C354	F1B3D1020008	CERAMIC 2KV 1000PF	

### PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P353	K3B10CA00040	CRT SOCKET	

### MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
153	TMM7443-1	CLAMPER	

## 13. SCHEMATIC DIAGRAMS FOR PRINTING WITH LETTER SIZE



# HEAD AMP C.B.A. LSEP2009A (C,H)

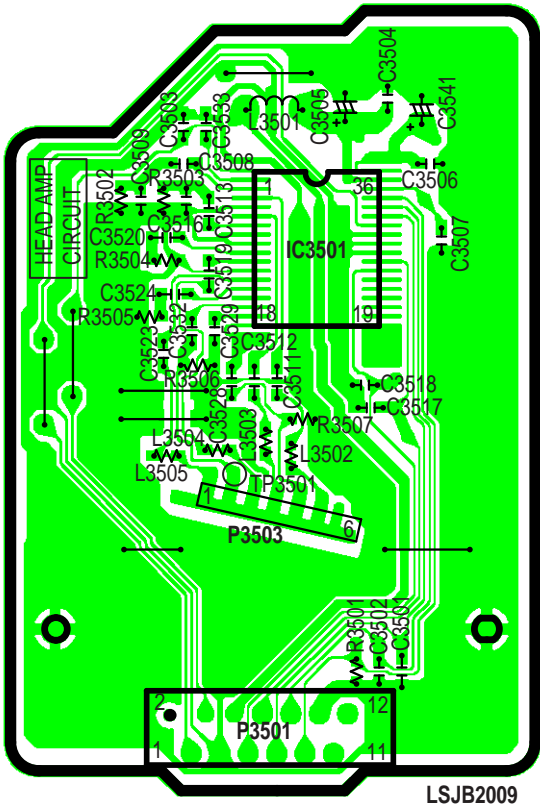
NOTE:  
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.  
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,  
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:  
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

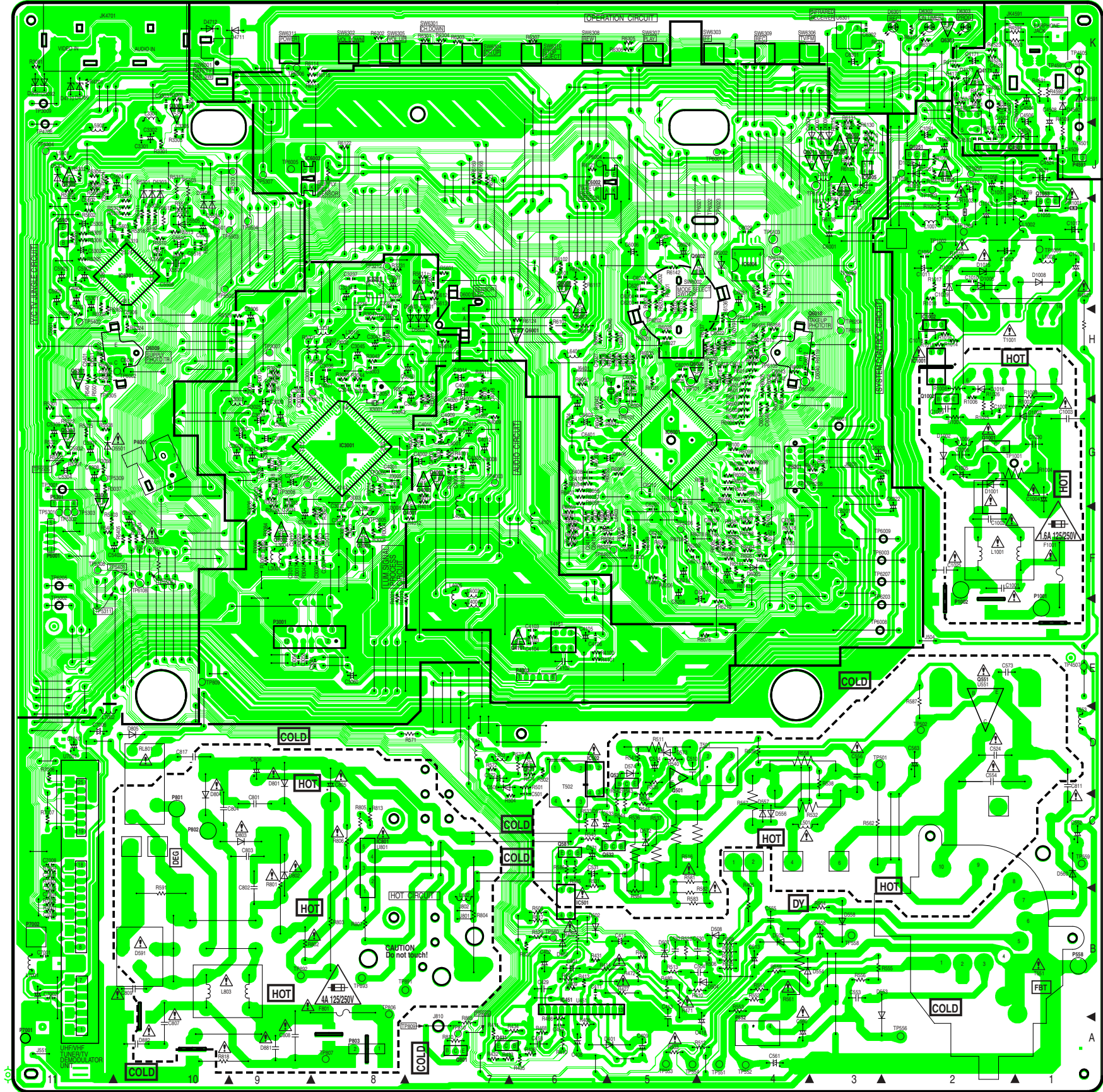
NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H







HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.

COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H


NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:  
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.  
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,  
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

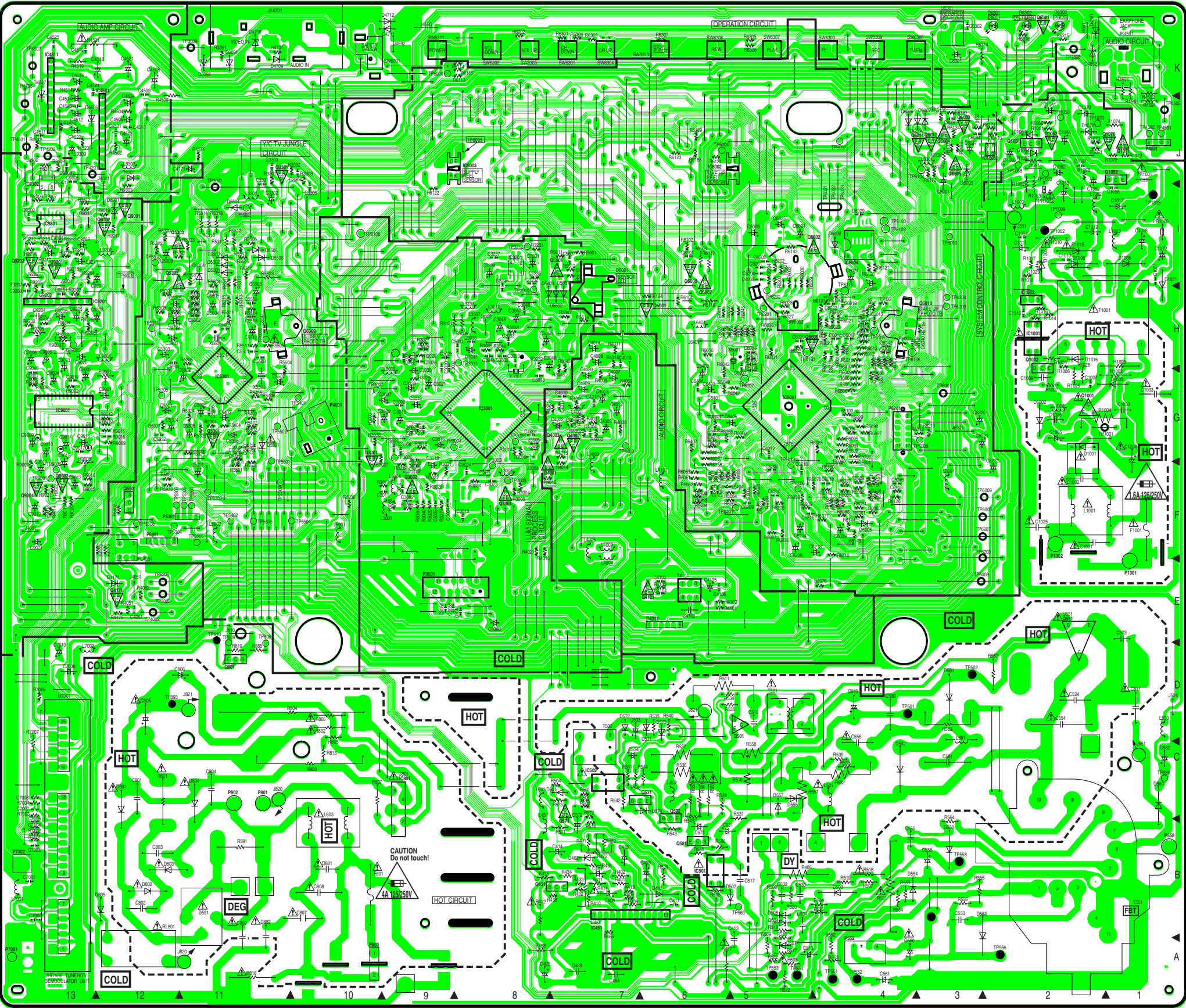
NOTE:  
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,  
REPLACE ONLY WITH THE SAME TYPE 4A 125/250V FUSE.  
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES  
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÊME  
TYPE 4A 125/250V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,  
REPLACE ONLY WITH THE SAME TYPE 1.6A 125/250V FUSE.  
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES  
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÊME  
TYPE 1.6A 125/250V

IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.





COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:  
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.  
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,  
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:  
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,  
REPLACE ONLY WITH THE SAME TYPE 4A 125/250V FUSE.  
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES  
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÊME  
TYPE 4A 125/250V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,  
REPLACE ONLY WITH THE SAME TYPE 1.6A 125/250V FUSE.  
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES  
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÊME  
TYPE 1.6A 125/250V

IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.



HEAD AMP C.B.A. LSEP2008A (A,B,D,E,F,G)

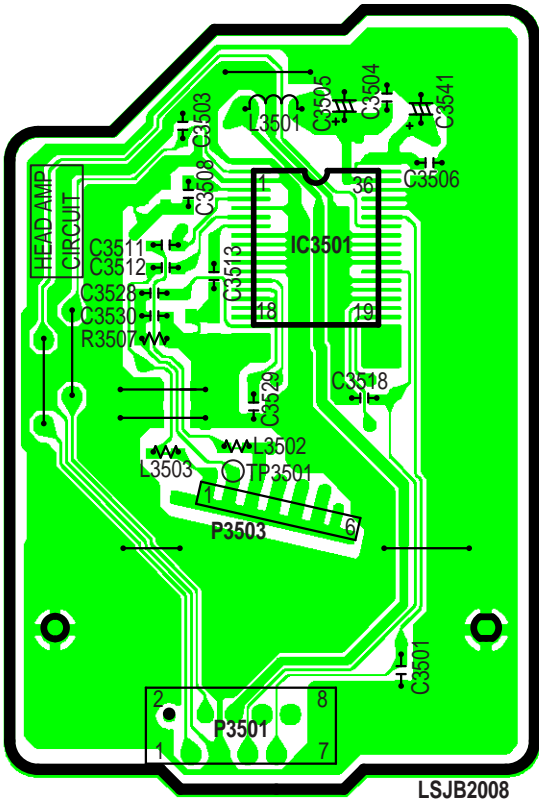
NOTE:  
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.  
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,  
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:  
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

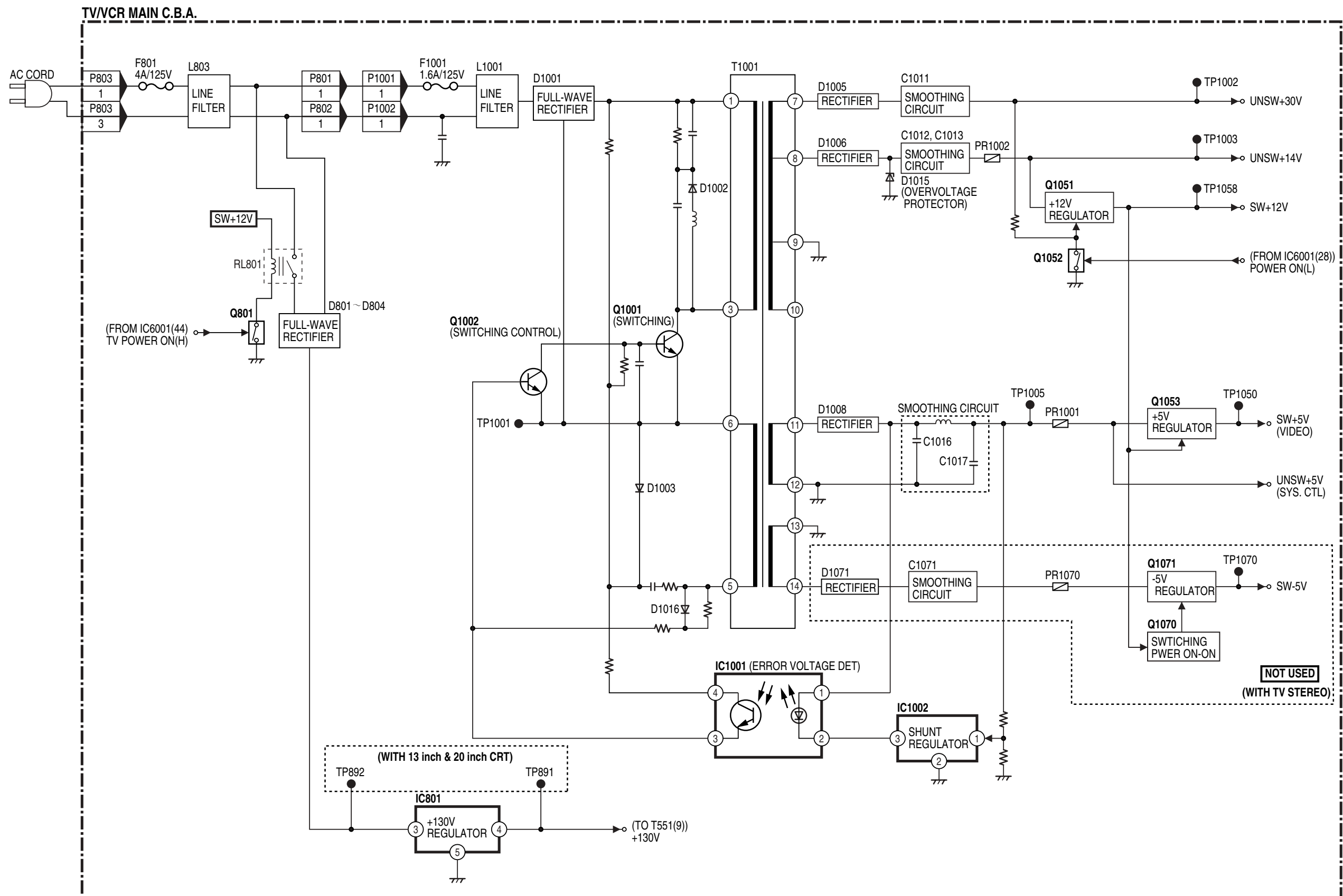
COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H





## TV/ORD MAIN C 5 A

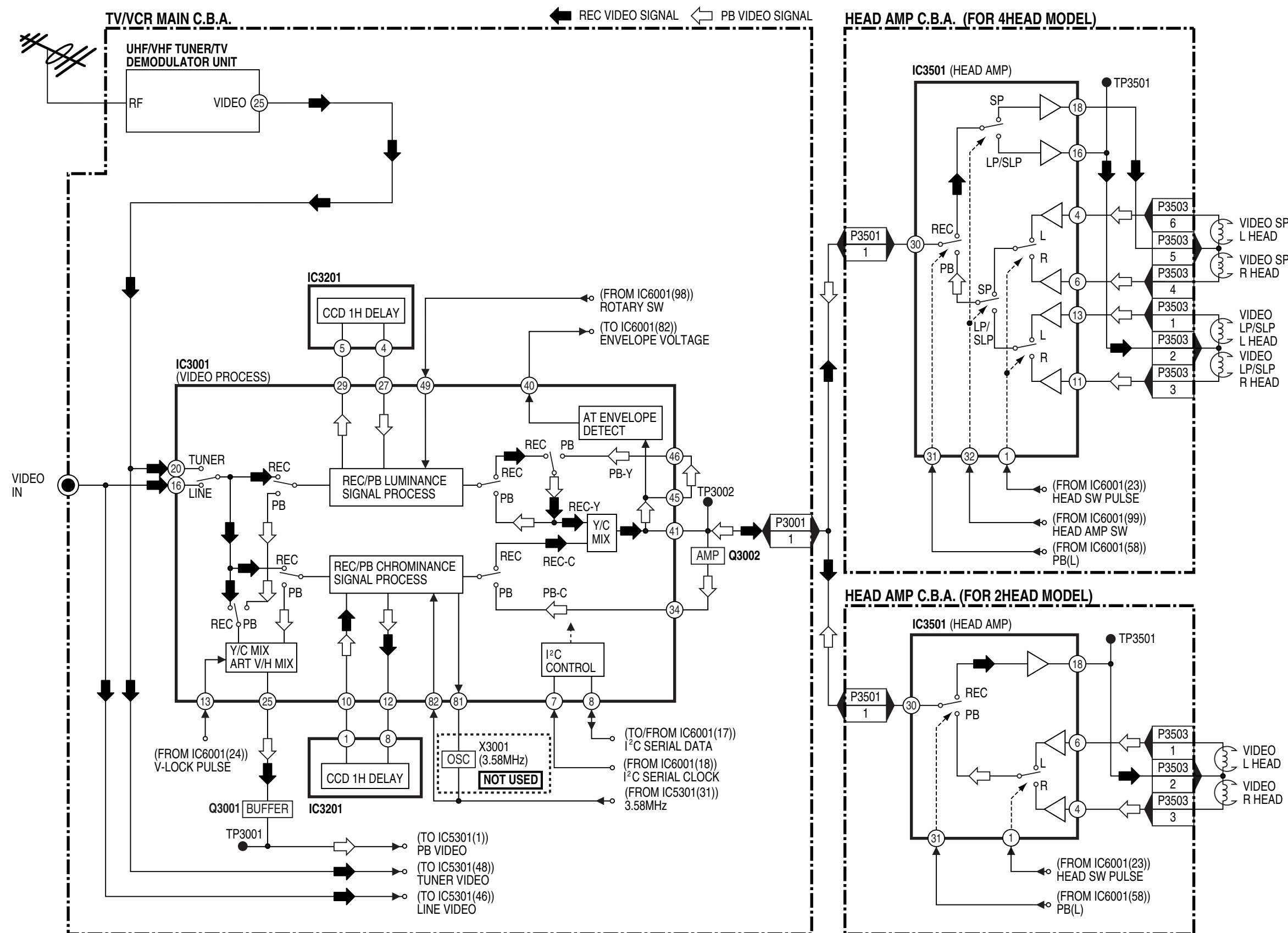


### POWER SUPPLY BLOCK DIAGRAM

**PVQ-1312W/PV-C1322-K/PV-C1352W-K/PVQ-2012/VV-2002/PV-C2022-K/PVQ-2512/PV-C2542**



VIDEO SIGNAL PATH BLOCK DIAGRAM

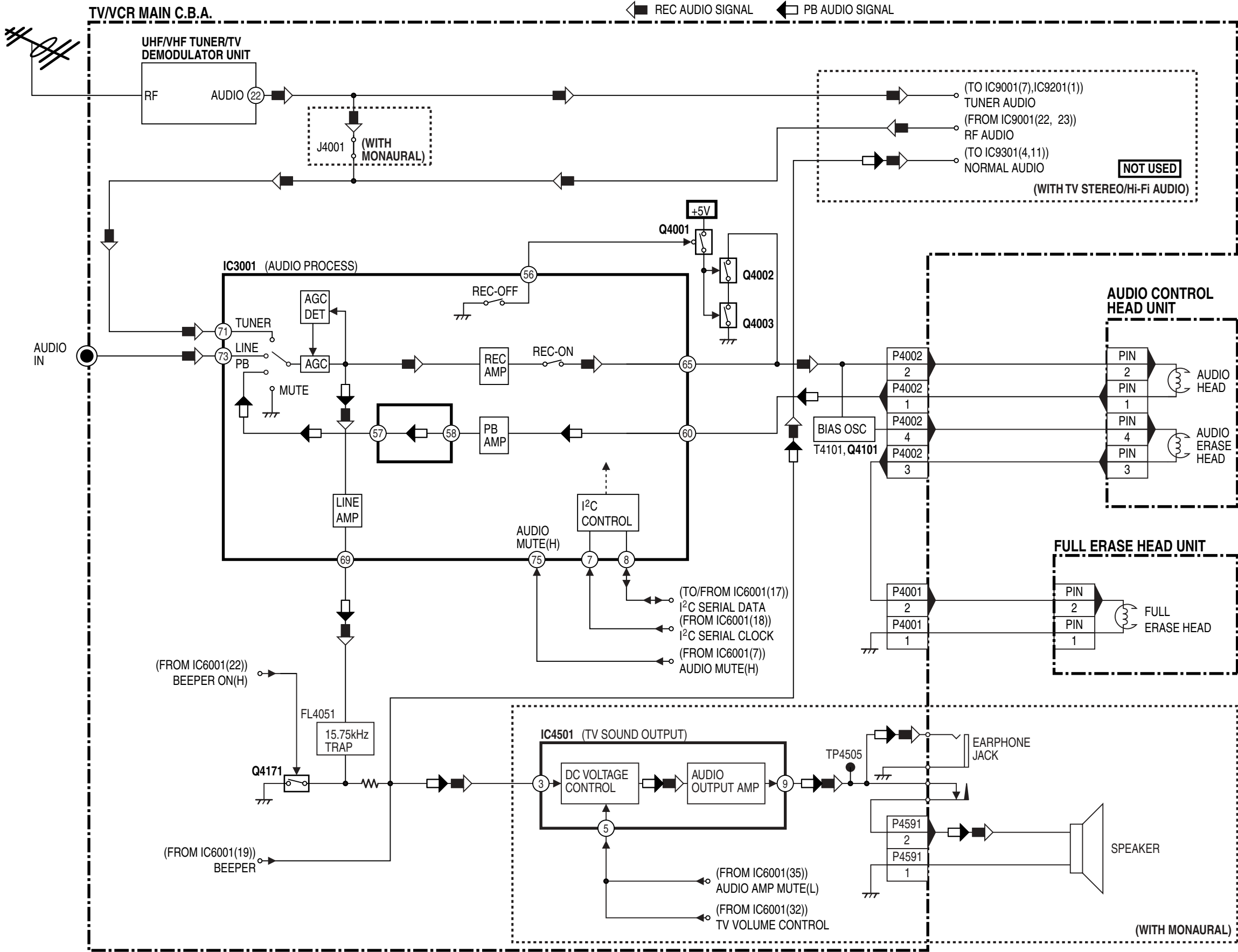


VIDEO SIGNAL PATH BLOCK DIAGRAM

PVQ-1312W/PV-C1322-K/PV-C1352W-K/PVQ-2012/VV-2002/PV-C2022-K/PVQ-2512/PV-C2542

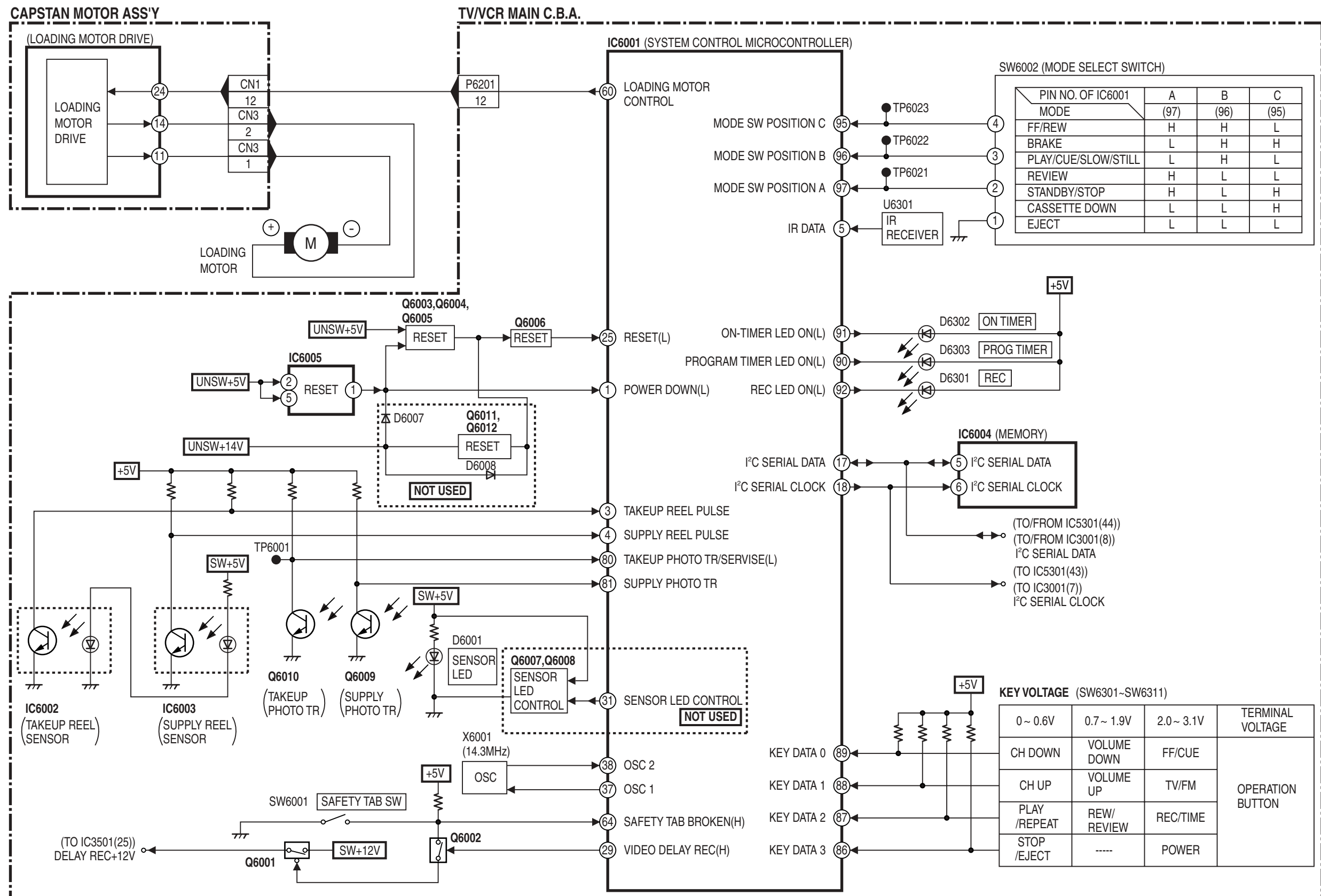


AUDIO SIGNAL PATH BLOCK DIAGRAM



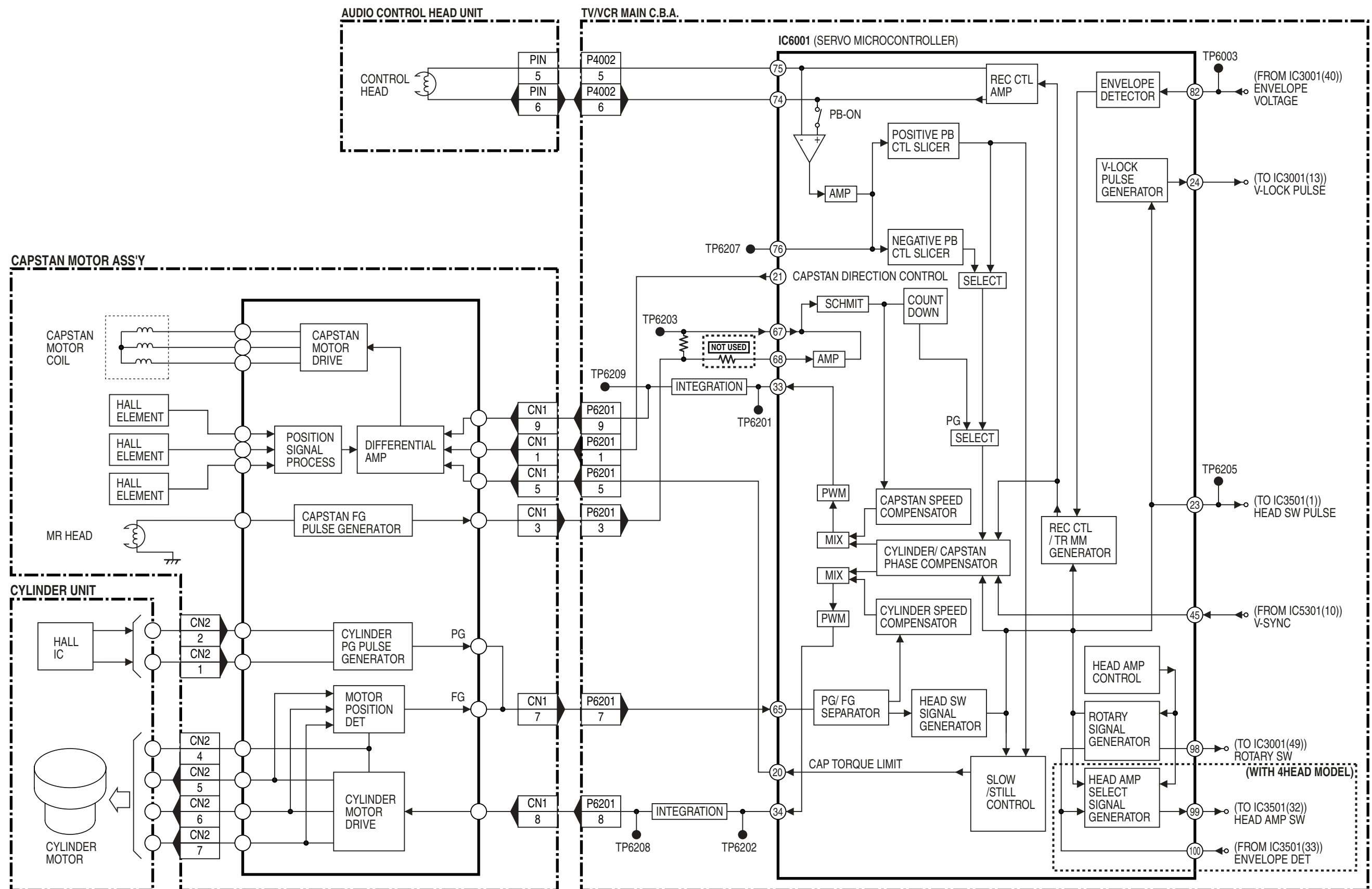


### SYSTEM CONTROL BLOCK DIAGRAM



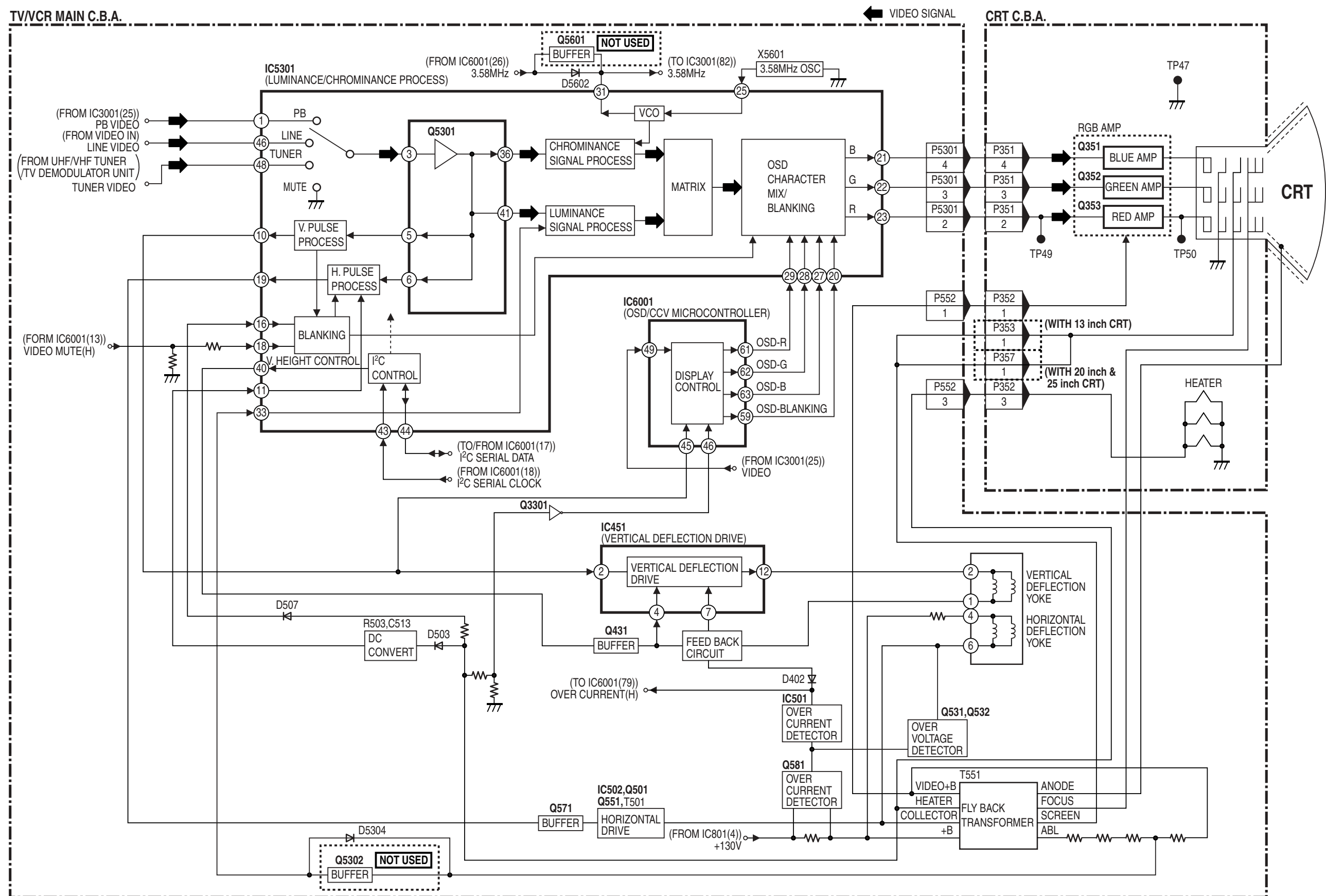


## SERVO BLOCK DIAGRAM





## TV / Y/C PROCESS BLOCK DIAGRAM





CRT C.B.A. LRP63004D (A,B,C)

NOTE:  
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.  
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,  
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

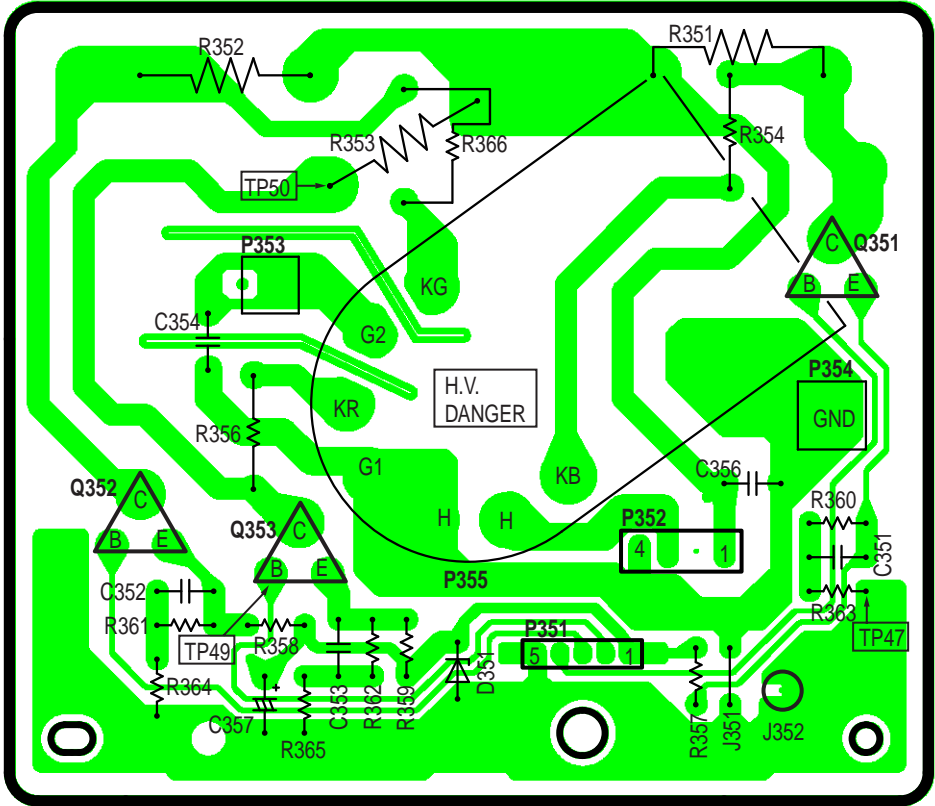
NOTE:  
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H

CAUTION: WHEN SERVICING THIS C.B.A., AVOID TOUCHING HIGH VOLTAGE COMPONENTS.



LRP63004



CRT C.B.A. LRP63022B (D,E,F)

NOTE:  
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.  
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,  
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

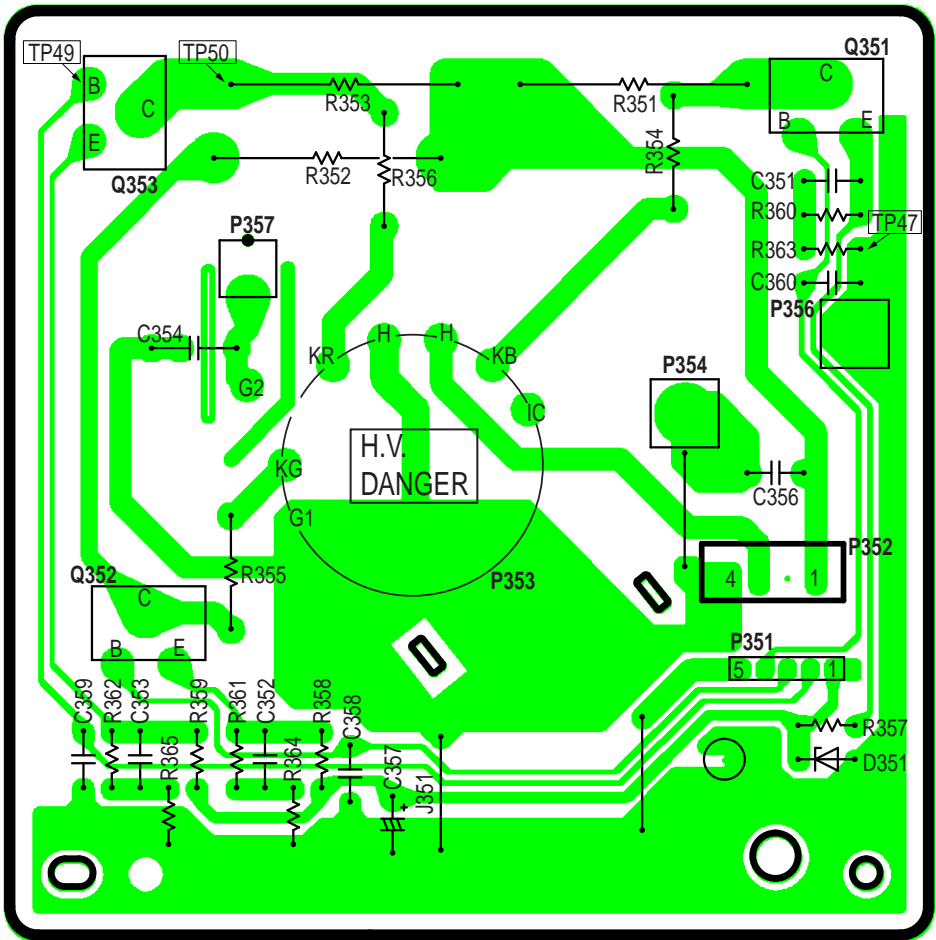
NOTE:  
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H

CAUTION: WHEN SERVICING THIS C.B.A., AVOID TOUCHING HIGH VOLTAGE COMPONENTS.



LRP63022

CRT C.B.A. LRP63022B  
PVQ-2012/VV-2002/PV-C2022-K



CRT C.B.A. LRP63005G (G,H)

NOTE:  
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.  
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,  
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

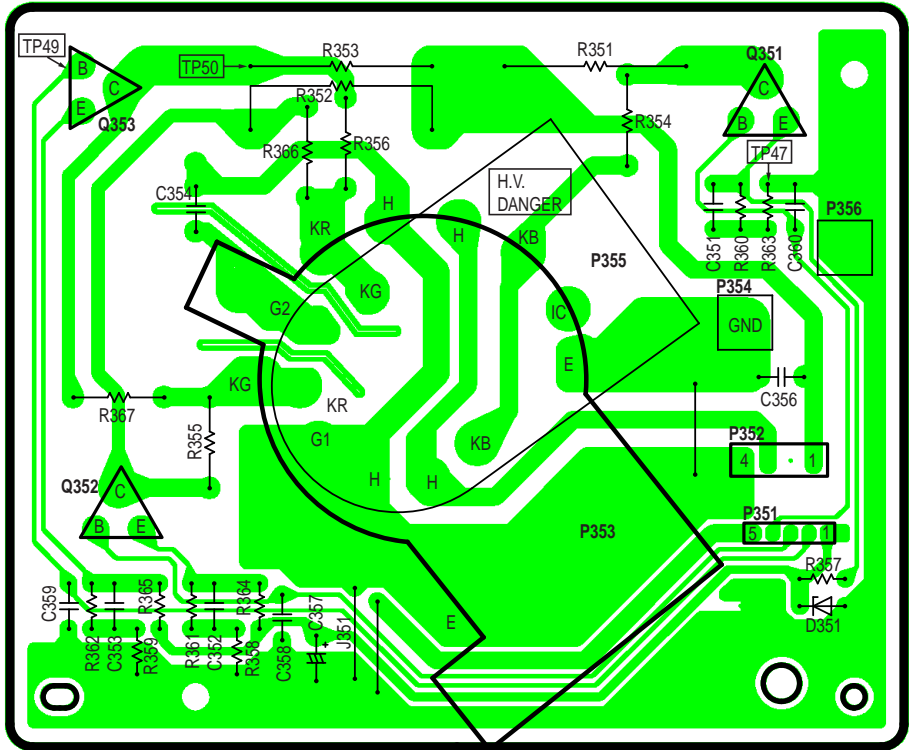
NOTE:  
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H

CAUTION: WHEN SERVICING THIS C.B.A., AVOID TOUCHING HIGH VOLTAGE COMPONENTS.







Omnivision VHS

# Panasonic®

## Combination VCR Operating Instructions

### Model No. PV-C2062/PV-C2542



- Initial Setup and Connection Procedures are on pages 8 and 9.



As an **ENERGY STAR®** Partner,  
Matsushita Electric Corporation of America has  
determined that this product or product model meets  
the **ENERGY STAR®** guidelines for energy efficiency.



Please read these instructions carefully before attempting to connect, operate, or adjust this product. Please save this manual.  
Spanish Quick Use Guide is included.  
(Guía para rápida consulta en español está incluida.)

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : [consumerproducts@panasonic.com](mailto:consumerproducts@panasonic.com)

Initial Setup

Basic Operation

TV Operation

Timer Operation

Advanced Operation

For Your Information

LSQT0582A



# Important Safeguards and Precautions

**READ AND RETAIN ALL SAFETY AND OPERATING INSTRUCTIONS. HEED ALL WARNINGS IN THE MANUAL AND ON UNIT**

## INSTALLATION

### 1 POWER SOURCE CAUTION

Operate only from power source indicated on unit or in this manual. If uncertain, have your Electric Utility Service Company or Video Products Dealer verify your home power source.

### 2 POWER CORD PLUG

For safety, this unit has a polarized type plug (one wide blade), or a three-wire grounding type plug. Always hold the plug firmly and make sure your hands are dry when plugging in or unplugging the AC power cord. Regularly remove dust, dirt, etc. on the plug.

### POLARIZED PLUG CAUTION:

The plug fits into outlet one way. If it cannot be fully inserted, try reversing it. If it still will not fit, have an electrician install the proper wall outlet. Do not tamper with the plug.

### GROUNDING PLUG CAUTION:

The plug requires a three-hole grounding outlet. If necessary, have an electrician install the proper outlet. Do not tamper with the plug.

### 3 POWER CORD

To avoid unit malfunction, and to protect against electrical shock, fire or personal injury:

- Keep power cord away from heating appliances and walking traffic. Do not rest heavy objects on, or roll such objects over the power cord.
- Do not tamper with the cord in any way.
- An extension cord should have the same type plug (polarized or grounding) and must be securely connected.
- Overloaded wall outlets or extension cords is a fire hazard.
- Frayed cords, damaged plugs, and damaged or cracked wire insulation are hazardous and should be replaced by a qualified electrician.

### 4 DO NOT BLOCK VENTILATION HOLES

Ventilation openings in the cabinet release heat generated during operation. If blocked, heat build-up may result in a fire hazard or heat damage to cassettes.

For your protection:

- Never cover ventilation slots while unit is ON, or operate unit while placed on a bed, sofa, rug, or other soft surface.
- Avoid built-in installation, such as a book case or rack, unless properly ventilated.

### 5 AVOID EXTREMELY HOT LOCATIONS OR SUDDEN TEMPERATURE CHANGES

Do not place unit over or near a heater or regulator, in direct sunlight, etc. If unit is suddenly moved from a cold place to a warm place, moisture may condense in unit and on the tape causing damage.

### 6 TO AVOID PERSONAL INJURY

- Never place unit on support or stand that is not firm, level, and adequately strong. The unit could fall causing serious injury to a child or adult and damage to the unit.
- Move any appliance and cart combination with care. Quick stops, excessive force, and uneven surfaces may cause objects to overturn.
- Carefully follow all operating instructions.



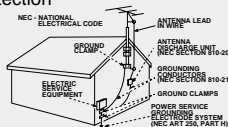
## OUTDOOR ANTENNA INSTALLATION

### 1 SAFE ANTENNA AND CABLE CONNECTION

An outside antenna or cable system must be properly grounded to provide some protection against built up static charges and voltage. Section 810 of the National Electrical Code,

ANSI/NFPA 70 (in Canada, part 1 of the Canadian Electrical Code) provides information regarding proper

grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.



### 2 KEEP ANTENNA CLEAR OF HIGH VOLTAGE POWER LINES OR CIRCUITS

Locate an outside antenna system well away from power lines and electric light or power circuits so it will never touch these power sources should it ever fall. When installing antenna, absolutely never touch power lines, circuits or other power sources as this could be fatal.

## USING THE UNIT

Before unit is brought out of storage or moved to a new location, refer again to the INSTALLATION section of these safeguards.

### 1 KEEP UNIT WELL AWAY FROM WATER OR MOISTURE, such as vases, sinks, tubs, etc.

### 2 IF EXPOSED TO RAIN, MOISTURE, OR STRONG IMPACT, unplug unit and have it inspected by a qualified service technician before use.

### 3 ELECTRICAL STORMS

During a lightning storm, or before leaving unit unused for extended periods of time, disconnect all equipment from the power source as well as the antenna and cable system.

### 4 WHEN UNIT IS PLUGGED IN

- DO NOT OPERATE IF:

- liquid has spilled into unit.
- unit was dropped or otherwise damaged.
- unit emits smoke, malodors, or noises.

Immediately unplug unit, and have it inspected by a service technician to avoid potential fire and shock hazards.

- Never drop or push any object through openings in unit.

Touching internal parts may cause electric shock or fire hazard.

- Keep magnetic objects, such as speakers, away from unit to avoid electrical interference.

### 5 USING ACCESSORIES

Use only accessories recommended by the manufacturer to avoid risk of fire, shock, or other hazards.

### 6 CLEANING UNIT

Unplug unit. Use a clean, dry, chemically untreated cloth to gently remove dust or debris. DO NOT USE cleaning fluids, aerosols, or forced air that could over-spray, or seep into unit and cause electrical shock. Any substance, such as wax, adhesive tape, etc. may mar the cabinet surface. Exposure to greasy, humid, or dusty areas may adversely affect internal parts.

## SERVICE

### 1 DO NOT SERVICE PRODUCT YOURSELF

If, after carefully following detailed operating instructions, the unit does not operate properly, do not attempt to open or remove covers, or make any adjustments not described in the manual. Unplug unit and contact a qualified service technician.

### 2 REPLACEMENT OF PARTS

Make sure the service technician uses only parts specified by the manufacturer, or have equal safety characteristics as original parts. The use of unauthorized substitutes may result in fire, electric shock, or other hazards.

### 3 SAFETY CHECK AFTER SERVICING

After unit is serviced or repaired, request that a thorough safety check be done as described in the manufacturer's service literature to insure video unit is in safe operating condition.



# Safety Precautions/Mesures de sécurité

**Warning :** To prevent fire or shock hazard, do not expose this equipment to rain or moisture.

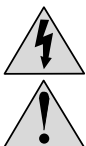
**Caution :** To prevent electric shock, match wide blade of plug to wide slot, fully insert.

**Avertissement :** Afin de prévenir tout risque d'incendie ou de chocs électriques, ne pas exposer cet appareil à la pluie ou à une humidité excessive.

**Attention :** Pour éviter les chocs électriques, introduire la lame la plus large de la fiche dans la borne correspondante de la prise et pousser jusqu'au fond.

This video recorder, equipped with the HQ (High Quality) System, is compatible with existing VHS equipment. Only use those tapes with the **VHS** mark. It is recommended that only cassette tapes that have been tested and inspected for use in 2, 4, 6, and 8 hour VCR machines be used. This television receiver provides display of television closed captioning in accordance with §15.119 of the FCC rules.

**FCC WARNING :** Any unauthorized changes or modifications to this equipment would void the user's authority to operate.



This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

This product utilizes both a Cathode Ray Tube (CRT) and other components that contain lead. Disposal of these materials may be regulated in your community due to environmental considerations. For disposal or recycling information please contact your local authorities, or the Electronics Industries Alliance: <<http://www.eiae.org>>

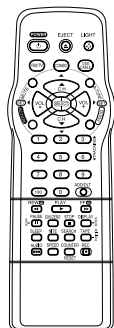
## Congratulations

on your purchase of one of the most sophisticated and reliable products on the market today. Used properly, it will bring you and your family years of enjoyment. Please fill in the information below. The serial number is on the tag located on the back of your unit.

Date of Purchase \_\_\_\_\_  
Dealer Purchased From \_\_\_\_\_  
Dealer Address \_\_\_\_\_  
Dealer Phone No. \_\_\_\_\_  
Model No. \_\_\_\_\_  
Serial No. \_\_\_\_\_

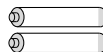
## Accessories

- Remote Control  
☐ LSSQ0319 (PV-C2062)  
LSSQ0341 (PV-C2542)



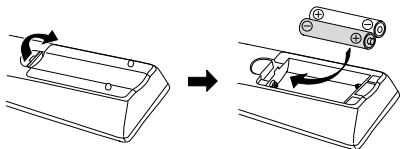
**Model PV-C2062**  
remote shown.

- ☐ Batteries  
2 "AA"



**To order accessories,**  
call toll free 1-800-332-5368.

## Loading the Batteries

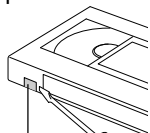


### Battery replacement caution

- Do not mix old and new batteries.
- Do not mix alkaline with manganese batteries.

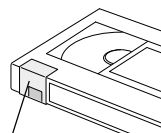
## Prevent Accidental Tape Erasure

Break off the tab to prevent recording.



Record Tab  
Screwdriver

To record again.



Cover the hole  
with cellophane tape.



# Unit Information

## Head Cleaning

Playing older or damaged tapes may eventually cause video heads to become clogged.

### Head Clog Sensor

During playback this screen appears if clogging is detected. To remove screen, press **PLAY** on the remote or unit.

VIDEO HEADS MAY  
NEED CLEANING  
PLEASE INSERT HEAD  
CLEANING CASSETTE  
OR REFER TO MANUAL

END:PLAY KEY

- Use "dry" type head cleaning cassette only. (Part No. NV-TCL30PT is recommended.)
- Follow cleaning tape directions carefully. Excessive use of head cleaning tape can shorten the video head life.
- If head clog symptoms persist, contact your nearest Factory Service Center or authorized Service Center. (See Page 36.)

## Features for a Quality Picture

### Digital Auto Tracking

Continuously analyzes the signal and adjusts for optimum picture quality.

### Manual Tracking Control (to reduce picture noise)

Use during Playback and Slow Motion mode to reduce picture noise. Press the 3 or 6 number key on the remote control or CH **▲▼** on the unit until the picture clears up. To return to Auto Tracking, press **POWER** off, then on again a few seconds later.

### PanaBlack™ Picture Tube (PV-C2542 only)

This unit uses a PanaBlack™ picture tube for better color reproduction and picture contrast.

### V-Lock Control

In Still mode, the 3 or 6 number key on the remote control or CH **▲▼** on the unit operate as a V-lock control to reduce jitter.

## Specifications

### Display

Picture Tube: 20 inch measured diagonal  
90° deflection Picture Tube (PV-C2062)  
25 inch measured diagonal  
110° deflection Picture Tube (PV-C2542)

### VCR

Video Recording System: 4 rotary heads helical scanning system  
Audio Track: 1 track

### Tuner

Broadcast Channels: VHF 2 ~ 13, UHF 14 ~ 69  
CABLE Channels: Midband A through I (14 ~ 22)  
Superband J through W (23 ~ 36)  
Hyperband AA ~ EEE (37 ~ 64)  
Lowband A-5 ~ A-1 (95 ~ 99)  
Special CABLE channel 5A(01)  
Ultradband 65 ~ 94, 100 ~ 125

### FM Radio

Band Range: 87.5 ~ 108.1 MHz

### General

Power Source: 120 V AC, 60 Hz  
Power Consumption: Power On  
Approx. 110 watts (PV-C2062)  
Approx. 136 watts (PV-C2542)  
Power Off  
Approx. 2.5 watts

Television System: EIA Standard NTSC color  
Speaker: 1 piece  
Operating Temperature: 5 °C ~ 40 °C (41 °F ~ 104 °F)  
Operating Humidity: 10 % ~ 75 %  
Weight: 23 Kg (50.6 lbs.) (PV-C2062)  
31 Kg (68.2 lbs.) (PV-C2542)

Dimensions:  
515 (W) X 505 (H) X 474 (D) mm  
20-5/16" (W) X 19-7/8" (H) X  
18-11/16" (D) (PV-C2062)  
634 (W) X 590 (H) X 464 (D) mm  
24-15/16" (W) X 23-1/4" (H) X  
18-1/4" (D) (PV-C2542)

**Note:** Designs and specifications are subject to change without notice.

## Record/Playback Time

Only use tapes with the **VHS** mark in this unit.

Tape Speed Setting	Type of Video Cassette		
	T60	T120	T160
SP (Standard Play)	1 Hour	2 Hour	2 Hours 40 Minutes
LP (Long Play)	2 Hours	4 Hours	5 Hours 20 Minutes
SLP (Super Long Play)	3 Hours	6 Hours	8 Hours

## DST (Daylight Saving Time)

Unit auto adjusts clock for DST (Daylight Saving Time.)

### ■ Spring (First Sunday in April)

DST : ON => Sets clock ahead one hour.

### ■ Autumn (Last Sunday in October)

DST : ON => Turns clock back one hour.

- If your area does not observe Daylight Saving Time, select DST:OFF.
- Keep these time changes in mind when programming the unit for timer recordings.



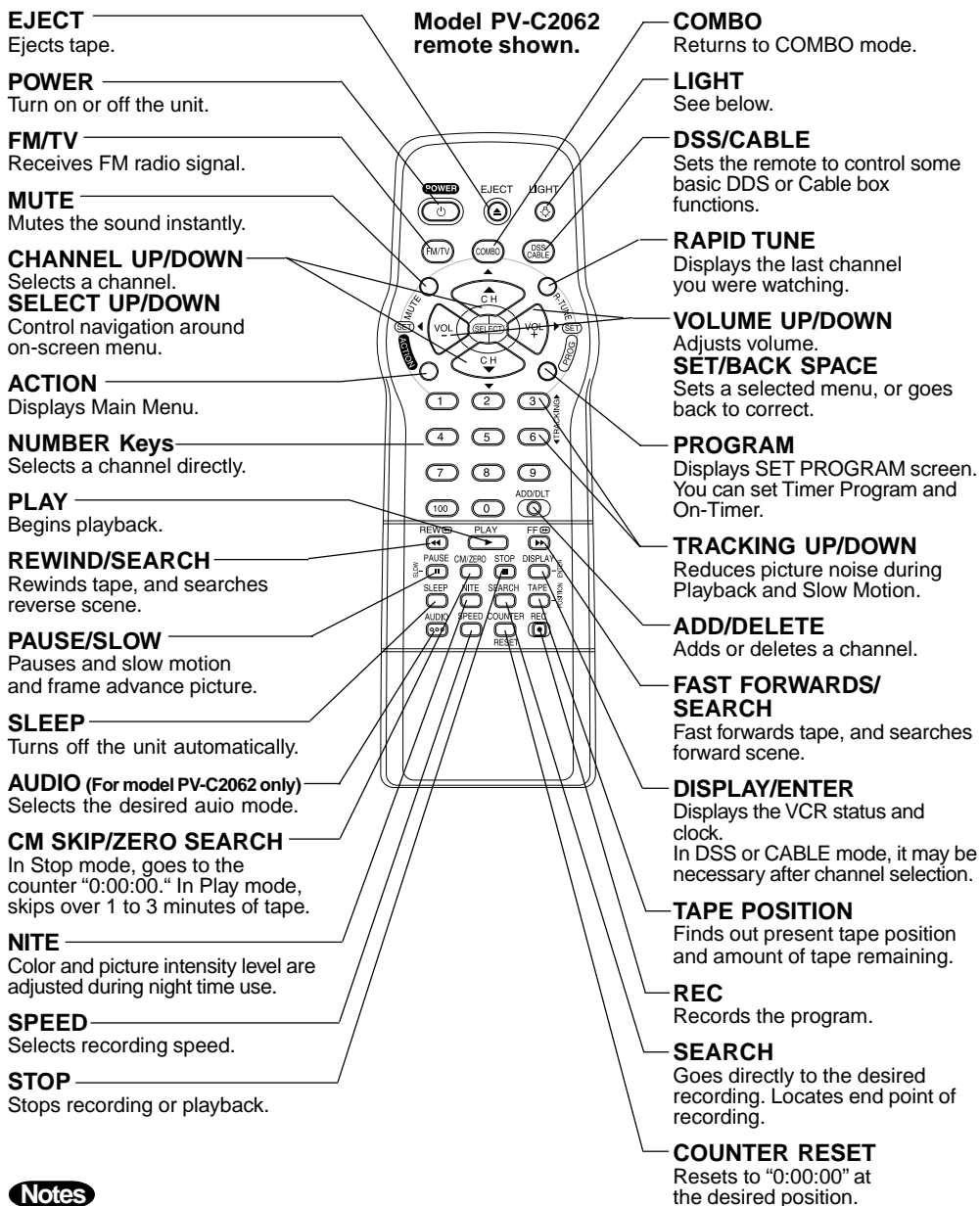
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# Location of Controls

## Remote Control Buttons (Light Tower™ Illuminated Remote Control)

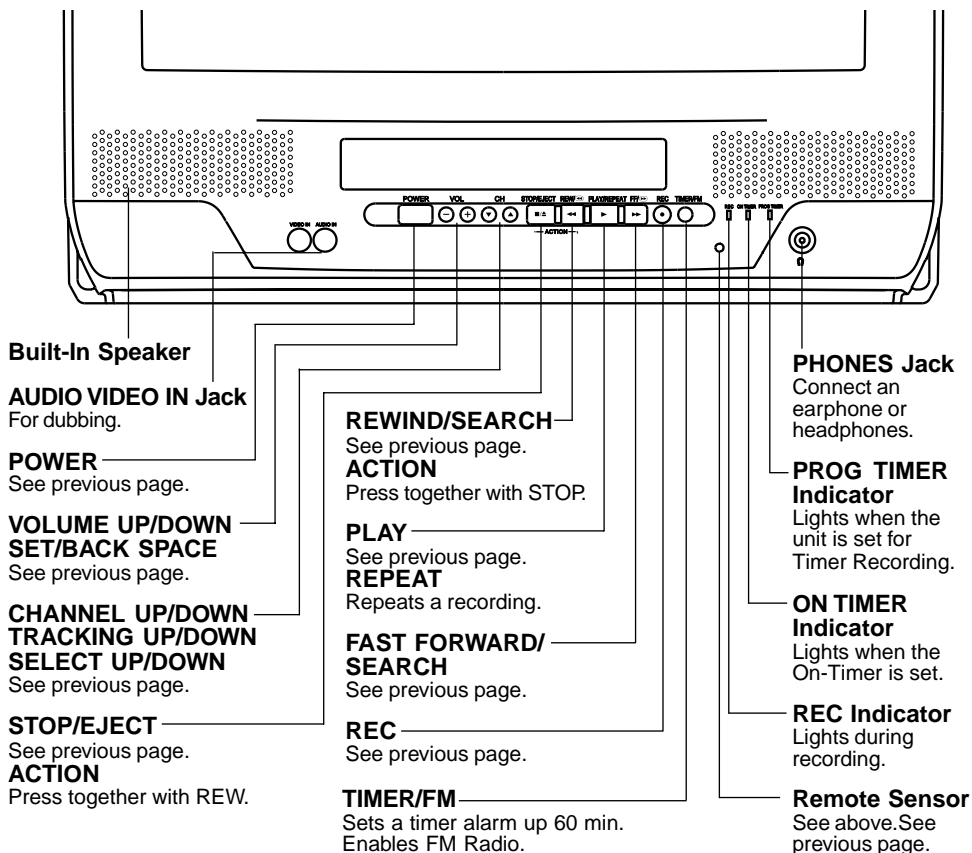


### Notes

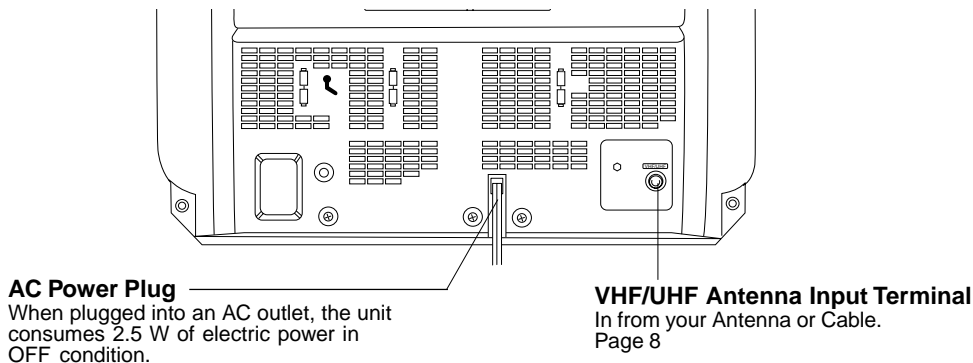
- When LIGHT is pressed, available buttons in the selected mode light up and the selected mode button (COMBO or DSS/CABLE) flashes for 5 seconds. If no button is pressed, light goes out in 5 seconds to conserve batteries. Also, by holding down a button, you can confirm the selected mode (mode button will flash) in the dark.
- When EJECT is pressed, the tape is ejected from Cassette Compartment. If EJECT is pressed during recording, the unit will not respond to the command.



## Front View of the Unit and Indicators



## Rear View of the Unit





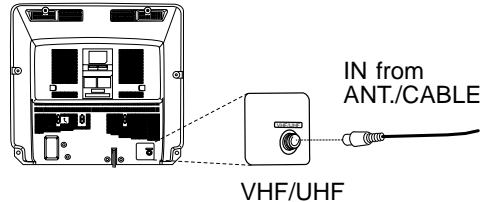
# Connections/ Initial Setup (Ready to Play)

Please make all cable or antenna connections before powering on.

## Connecting

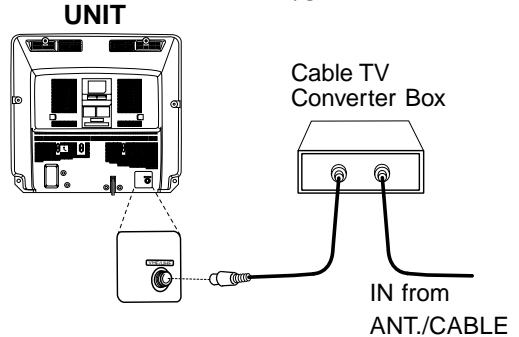
### For ANT./Cable

Connect the cable from Antenna/Cable to the VHF/UHF terminal on the unit.



### For DSS/Cable Box

Connect the OUT jack on your cable box to the VHF/UHF terminal on the unit with a RF cable.



#### WARNING:

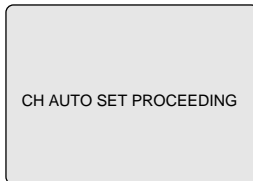
Overtightening "Nut type" RF coaxial cables may damage jacks. Finger tighten only.

## Initial Setup (Ready to Play)

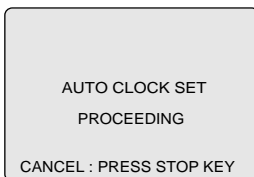
Press Combo on the remote for Combo mode.

**1** Plug the unit power cord into an AC wall outlet.

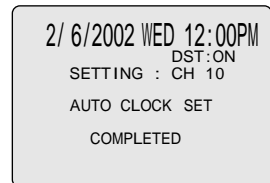
**2** Press Power\* on the remote or unit. The unit comes on and auto channel and clock set starts.



- If you use a cable box, turn it on and set it to the Public Broadcasting Service (PBS) channel in your time zone. If you use a DSS receiver, it must be turned off.



**3** Settings are made automatically. When setup is done, this screen appears.



If AUTO CLOCK SET IS INCOMPLETE screen appears, set the clock using MANUAL CLOCK SET procedure as below.



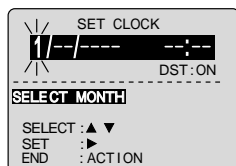


**\*Important:** If a remote control button does not work when pressed, press the COMBO button on the remote and try the button again.

## Manual Clock Set

If AUTO CLOCK SET was incomplete, manually set the clock as follows.

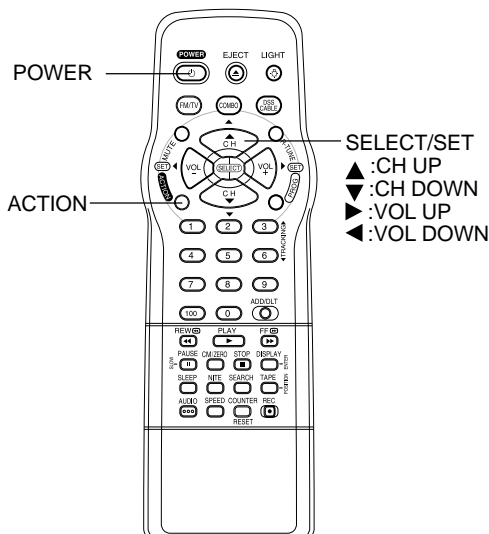
- 1 Press **ACTION** on the Remote to display SET CLOCK Menu screen.



- 2 Press **▲▼** to select the month and press **►** to set. In the same manner, select and set the date, year, time, and DST. (Daylight Saving Time)



- 3 Press **ACTION** twice to start CLOCK and exit.

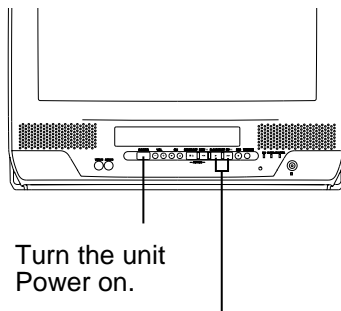


Model PV-C2062 remote shown.

## Reset all unit Memory Functions

When moving unit to a new location, or if a mistake was made in the Initial Setup section.

- Make sure a tape is not inserted in the unit.



- 1 Turn the unit Power on.
- 2 Press and hold both **PLAY** and **FF** on the unit for more than 5 seconds.
  - The power will shut off.
  - Please ignore "NO CASSETTE" warning.
- 3 Do "Initial Setup" on page 8.

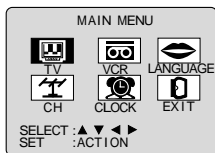
### Note to CABLE System Installer

This reminder is provided to call the CABLE (Cable TV) System Installers attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.



# Reset Language, Channels, Clock,

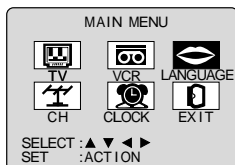
1



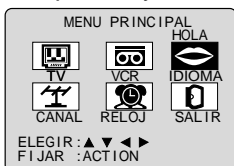
Press **ACTION\***  
to display MAIN MENU.

## 2 Language

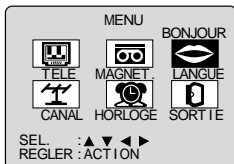
- 1) Press **▲▼◀▶** to select language icon.



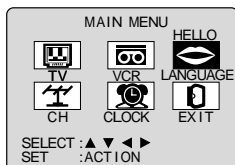
- 2) Press **ACTION** repeatedly.



For Spanish



For French

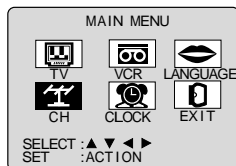


For English

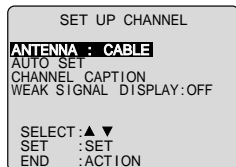
- 3) Press **▲▼◀▶** to select "EXIT."  
Press **ACTION** to exit.

## Channels

- 1) Press **▲▼◀▶** to select "CH."



- 2) Press **ACTION**.



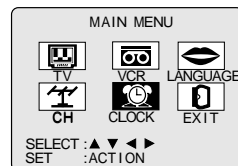
- 3) Press **▲▼** to select "ANTENNA," then press **▶** to set your antenna system ("TV" or "CABLE").

- 4) Press **▲▼** to select "AUTO SET," then press **▶**.

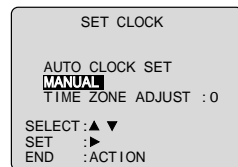
- After Channel Auto Set is finished, Clock Auto Set will be performed. (If clock is set manually, Clock Auto Set will not be performed.)

## Clock

- 1) Press **▲▼◀▶** to select "CLOCK."



- 2) Press **ACTION**.



("TIME ZONE ADJUST" appears only when auto clock is set.)

- 3) Press **▲▼** to select "MANUAL" or "AUTO CLOCK SET" and press **▶**.

- For Auto Clock Set, select "AUTO CLOCK SET," then press "SET".



- 4) Press **▲▼** and press **◀▶** to select and set the month, date, year, time, and DST (Daylight Saving Time).

- 5) Press **ACTION** twice to start the clock and exit this mode.



# Time Zone Adjust

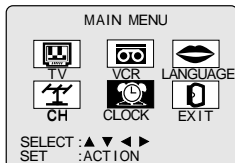
## \*Important:

If a remote control button does not work when pressed, press the COMBO button on the remote and try the button again.

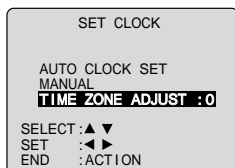
## Time Zone Adjust

(Only when Auto Clock is set.)

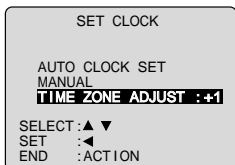
- 1) Press **▲▼◀▶** to select "CLOCK."



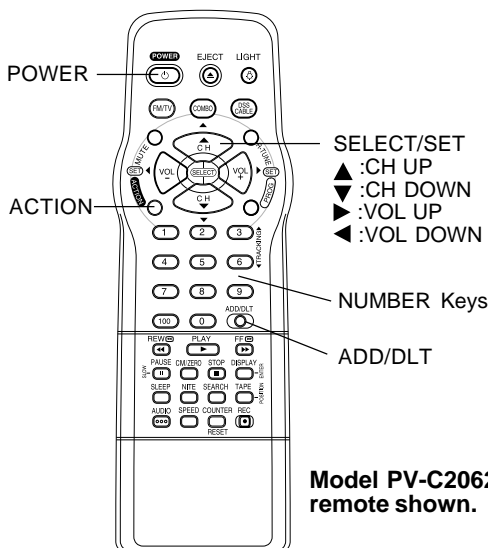
- 2) Press **ACTION**.



- 3) Press **▲▼** to select TIME ZONE ADJUST and press **◀** or **▶** to subtract or add hour(s) as necessary.



- 4) Press **ACTION** twice to exit.



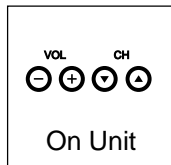
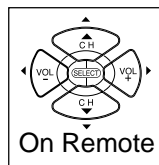
Model PV-C2062 remote shown.

## ACTION key on the unit



You can operate the menu screen using unit buttons. To display the menu, press STOP/EJECT and REW together with no tape inserted. To exit the menu, repeat above with or without tape inserted until normal screen appears.

## Using ▲▼◀▶ keys

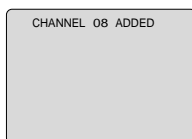


- ▲ : CH UP
- ▼ : CH DOWN
- ▶ : VOLUME UP
- ◀ : VOLUME DOWN

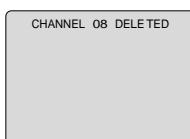
Whenever the menu or program screen is displayed, CHANNEL UP/DOWN function as ▲▼ and VOLUME UP/DOWN function as ◀▶ only.

## Add or Delete a Channel

To add channel:  
Select channel with number keys and press ADD/HLT.



To delete channel:  
Select channel with CH ▲▼ or number keys and press ADD/HLT.



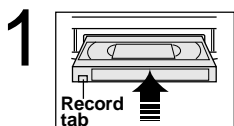


# Playback a Tape

# Record On a Tape

## ✓ Ready Check List

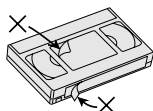
- ☐ All connections are made.
- ☐ Your unit is plugged in.



### 1 Insert a cassette.

- The unit power comes on automatically.

To prevent tape jam, remove loose or peeling labels from tapes.



## 2 Press PLAY\*

- Playback begins if cassette has no record tab.

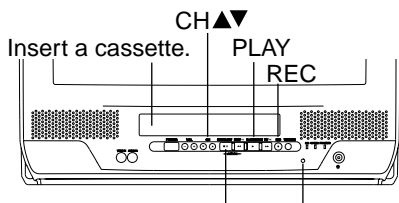
- **Forward/Reverse scene search**  
=> Press FF or REW  
=> Press again or PLAY to release.
- **Still (Freeze) picture**  
=> Press PAUSE/SLOW  
=> Press PLAY to release.
- **Slow Motion picture**  
=> Hold down PAUSE/SLOW in Still mode  
=> Press PLAY to release.
- **Frame by Frame picture**  
=> Press PAUSE/SLOW in Still mode  
=> Press PLAY to release.

### Notes

- These features work best in SLP mode.
- After the unit is in Still or Slow mode for 3 minutes, it will switch to Stop mode automatically to protect the tape and the video head.

- **Stop => Press STOP**
- **Rewind tape => Press REW in Stop mode**
- **Fast forward tape => Press FF in Stop mode**
- **Eject tape => Press EJECT on the remote or STOP/EJECT on the unit**

### You can operate on the unit



- Press to stop and/or eject tape REC Indicator

## 1 Insert a cassette with record tab.

- The unit power comes on automatically.

## 2 Press CH ▲▼ or number keys to Select Channel.

- For "LINE" input, see bottom of next page.

## 3 Press SPEED to select recording speed (see page 4).

- SP = Standard Play
- LP = Long Play
- SLP = Super Long Play
- Selected speed is displayed.

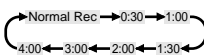
## 4 Press REC to start recording.

- To edit unwanted portions, **press PAUSE/SLOW** to pause and resume recording.
- You cannot view another channel during recording.

### ■ Stop => Press STOP

### ■ One Touch Recording (OTR)

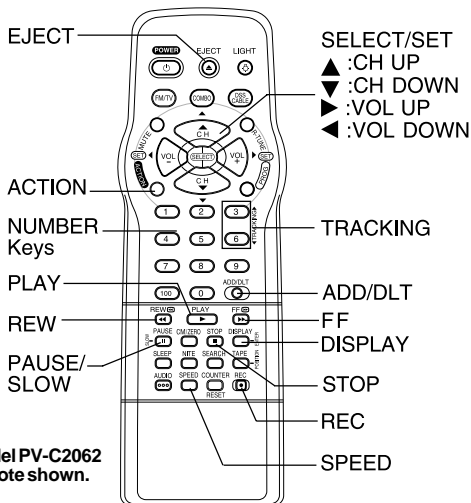
Press REC repeatedly to set the recording length (30 min - 4 hours).



- The unit stops recording at a preset time.
- PROG TIMER indicator lights on the unit.

### Notes

- After the unit has been in Rec Pause mode for 5 minutes, it will stop automatically to protect the tape and the video head.
- The remaining recording time of an OTR can be displayed by pressing DISPLAY.



Model PV-C2062 remote shown.

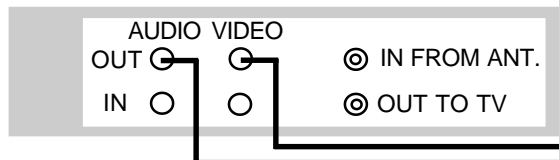


# Copy Your Tapes (Dubbing)

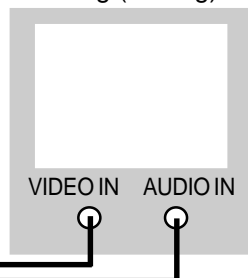
**\*Important:** If a remote control button does not work when pressed, press the COMBO button on the remote and try the button again.

## Connections you'll need to make.

Playing (Source) VCR



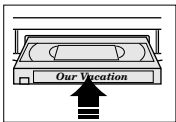
Recording (Editing) unit



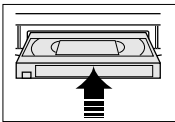
Basic Operation

## Playback (Source)

## Recording (Editing) unit


- 1** 

**Insert pre-recorded tape.**

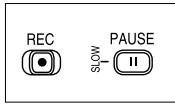


**Insert blank tape with record tab.**

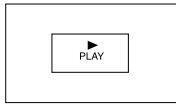
  - Dubbing tapes protected with Copy Guard will have poor quality results.
- 2** \_\_\_\_\_

**Select "LINE" mode.**  
See "Selecting Input Mode" below.
- 3** 

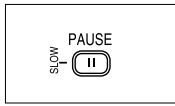
**Press PLAY then PAUSE at starting point to put in Standby mode.**

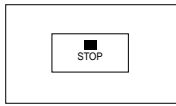


**Press REC, then PAUSE/SLOW immediately to put in Standby mode.**

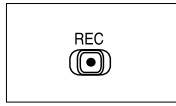
**(Perform operation of steps 4 and 5 on both units at same time.)**
- 4** 

**Press PLAY to start dubbing.**



**Press PAUSE/SLOW to start dubbing.**
- 5** 

**Press STOP to stop dubbing.**



**Press STOP to stop dubbing.**

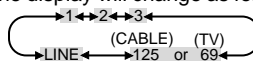
### Caution

- Unauthorized exchanging and/or copying of copyrighted recordings may be copyright infringement.

## Selecting Input Mode

### Method 1:

Press CH ▲▼. The display will change as follows.



### Method 2:

- a Press ACTION for MAIN MENU.
- b Press ▲▼◀▶ to select "TV", then press ACTION for SET UP TV screen.
- c Press ▲▼ to select "INPUT SELECT," and then press ▶ to select "TUNER" or "LINE."
- d Press ACTION twice to exit this mode.



# TV Operation

**\*Important:** If a remote control button does not work when pressed, press the COMBO button on the remote and try the button again.

**1 Press POWER\* on the remote or unit.**

☒ **Ready Check List**

- ☐ All connections are made.
- ☐ Your unit is plugged in.

**2** Use CH ▲▼ or number keys to select a channel.



**3** Press VOL + or VOL - to adjust volume.



## NIGHT (NITE) Mode

Color and picture intensity levels are adjusted so the screen is easier on your eyes during night time use.

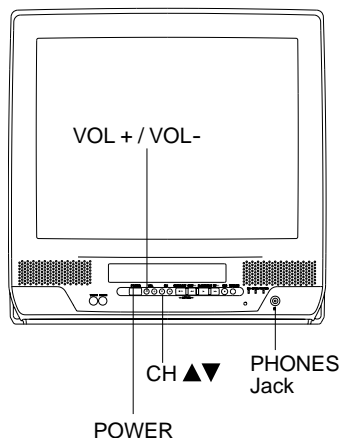


**Press NITE** to set NIGHT mode.

- NIGHT mode may be selected when watching TV or playing a tape.

**Press NITE** to cancel.

- Previous settings are restored.
- NIGHT mode is canceled when power is turned off or power failure occurs.



## ■ Using the 100 key

When selecting CABLE channels 100 to 125 with the number keys, first press the 100 key, and then enter the remaining two digits.

## ■ Rapid Tune

Press R-TUNE to display the last channel you were watching.

## ■ Audio Mute

Press MUTE to instantly mute the sound. Press again to restore the previous sound level.

## ■ Phones

Connect an earphone (not supplied) or headphones (not supplied) to the Phones Jack.



# MTS Broadcast/TV Stereo System

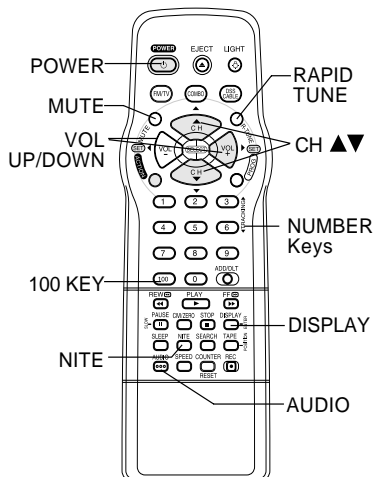
## For Model PV-C2062 only

Equipped with **dbx®** -TV Noise Reduction for true MTS reproduction. **dbx®** -TV Noise Reduction is required for good stereo separation and audio fidelity. **dbx®** is a registered trademark, and is licensed by **dbx®** Technology Licensing.

### Receivable Broadcast Types

The following are possible audio broadcast types and on-screen displays. The signal being received is indicated with an "Ⓢ" mark while the selected audio mode is indicated with an arrow. To change the audio mode for these broadcasts, see the "Select Audio Mode for TV Viewing" section (below.)

**Press DISPLAY to display the broadcast signal being received.**



STOP 12:00AM ABC  
ⓈSTEREO+  
ⓈSAP  
MONO

#### MTS Stereo and SAP broadcast

Multi-channel Television Sound Stereo (main language) and Secondary Audio Program (sub language) broadcasts are being received simultaneously. Select the STEREO or SAP audio mode.

STOP 12:00AM ABC  
ⓈSTEREO+ 0:00:00 SP  
SAP  
MONO

#### MTS Stereo broadcast

Multi-channel Television Sound Stereo broadcast. Select STEREO audio mode.

- If stereo broadcast is weak and the display flickers, select MONO audio mode for possibly better results.

STOP 12:00AM ABC  
STEREO  
SAP  
MONO +

#### SAP broadcast

Secondary Audio Program (sub language).

Select SAP audio mode for the sub language.

STOP 12:00AM ABC  
STEREO  
SAP  
MONO +

#### MONO broadcast

Normal monaural sound broadcast.

TV Operation

### Select Audio Mode for TV Viewing

**Press AUDIO to select the desired audio mode as described above.**

(Arrow shows selection.)

- Each press of AUDIO will change the audio mode as shown below.
- "SAP" is selected with first press of AUDIO.

< Example >



#### IMPORTANT NOTE:

- This stereo system is designed for TV viewing only. Recording and playback will always be in monaural.



# TV Timer Features

## ON-TIMER with Alarm

This unit can be set to automatically power on in one of 2 modes (TV, Playback, or FM radio).

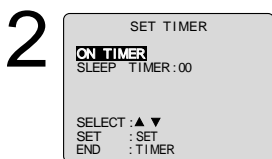
You can also combine the On-Timer with a one minute alarm that gradually increases in volume.



### Ready Check List

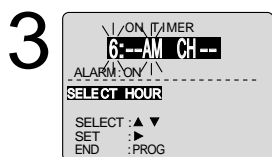
- ☐ The clock is set to correct time.

**1 Press PROG\*** to display SET PROGRAM screen.

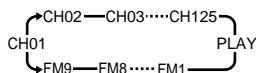


1) Press ▲▼ to select "ON TIMER."

2) Press ► to display ON TIMER screen.



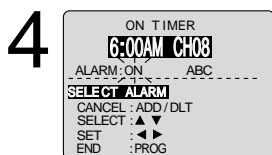
- ON-TIMER mode selection order



1) Press ▲▼ to select desired settings.

2) Press ► to set the ON-TIMER TIME or ON-TIMER mode.

- Make sure a tape is inserted if Playback mode is selected.
- See "FM Radio" on page 20 for instructions on how to preset FM stations.



Press ▲▼ to select ALARM "ON" or "OFF."

**When "ON" is selected,**  
an alarm will gradually increase in volume for one minute or until canceled by pressing any button (including VOL + -).

### To Make Corrections,

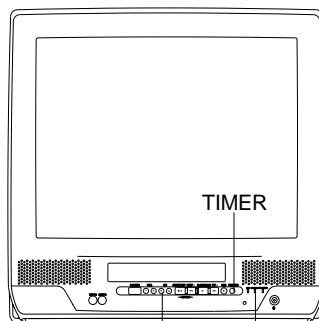
use ▲▼ and ◀▶ to move back and correct.

**5 Press PROG** to set ON TIMER.

- "ON TIMER SET" is displayed.
- ON TIMER Indicator lights on the unit.

### To Cancel ON-TIMER set,

Repeat steps 1 and 2. Then, **press ADD/ DLT** to clear the time in step 3. Now, **press PROG** to end. "ON TIMER END" briefly appears on-screen.



CH ▲▼

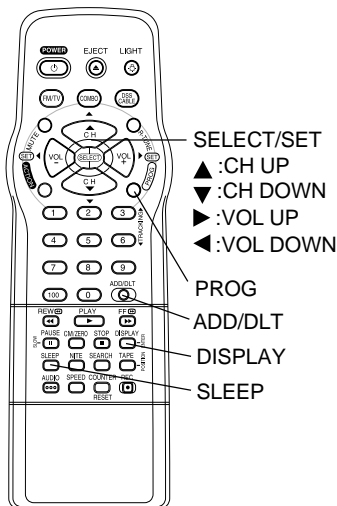
ON TIMER indicator

### Note

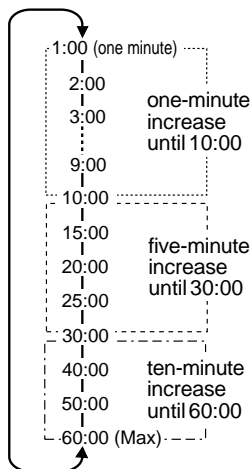
- If no button on the remote or unit (including a button used to turn off the alarm) is pressed within 60 minutes after unit turns itself on, it will turn itself back off.



**\*Important:** If a remote control button does not work when pressed, press the COMBO button on the remote and try the button again.



Model PV-C2062 remote shown.



#### Note

- While timer function is in progress, you can change channels on the unit with CH ▲▼ while "CANCEL/SET" screen is not displayed.

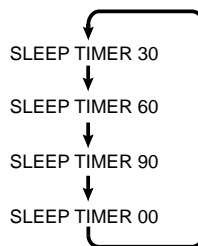
## Sleep Timer

This unit can be set for auto power off.

**Press SLEEP** repeatedly to set SLEEP TIMER.

- Pressing **DISPLAY** with sleep timer set displays remaining time.

**Press SLEEP** repeatedly until "SLEEP TIMER 00" appears to cancel.

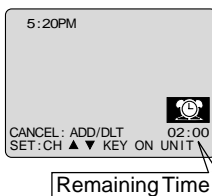


## Instant Alarm

You can set a timer alarm up to 60 min. Useful when you are cooking, etc.

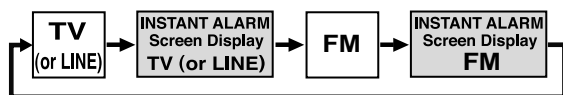
**1 Press TIMER/FM on the unit to display the instant alarm CANCEL/SET screen.**

**2**



**Press CH ▲▼ on the unit with CANCEL/SET screen displayed to set alarm.** (Time changes in the order shown left.)

- Pressing **TIMER/FM** repeatedly on the unit will change display as follows.



**To cancel**, press **TIMER/FM** then press **ADD/HLT** on the remote while **CANCEL/SET** screen is displayed.

**To increase timer in progress**, repeat step 2. Time will be rounded up to next 1, 5, or 10 minute interval. (See chart left.)

<Example>

- If current time remaining is 12:15, countdown will restart from 15:00.
- If current time remaining is 9:15, countdown will restart from 10:00.

**3 Alarm will sound at 0: 00. Press any button to stop**

- The volume of the alarm gradually increases for one minute and then continues to beep until any button is pressed.



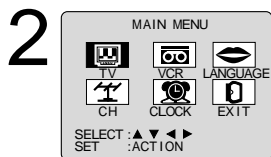
# Closed Caption System

## Closed Caption is ...

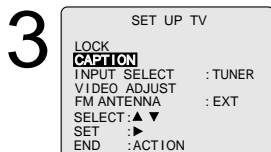
This multi-use system not only allows the hearing impaired to enjoy selected programs, but also makes useful information from TV stations available to everyone.

### Closed Caption Mode Feature

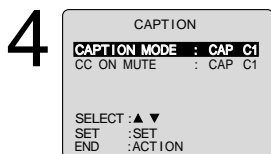
- 1** Press **ACTION\*** to display MAIN MENU.



- 1) Press **▲▼◀▶** to select "TV."  
2) Press **ACTION** to display SET UP TV screen.



- 1) Press **▲▼** to select "CAPTION".  
2) Press **▶** to display CAPTION screen.



- 1) Press **▲▼** to select CAPTION MODE.  
2) Press **▶** repeatedly to select mode. (See left.)



- 5** Press **ACTION** three times to return to the normal screen.

### Closed Caption Mode Selections

#### Caption Mode: CAP C1 or C2

A narration of selected TV programs is displayed. Check TV program listings for CC(Closed Caption) broadcasts.

#### Caption Mode: TEXT C1 or C2

The lower half of the screen will be blocked out. When the TV station broadcasts information, such as program listings, it will appear in this space.

#### Caption Mode: OFF

Closed Caption / Text narration will not be displayed.

#### NOTE :

The closed caption or text signal may be broadcast over C1, C2, or both. Also, text contents can vary so you may wish to try different settings.

### Recording and Playing Back a Closed Caption/Text Program

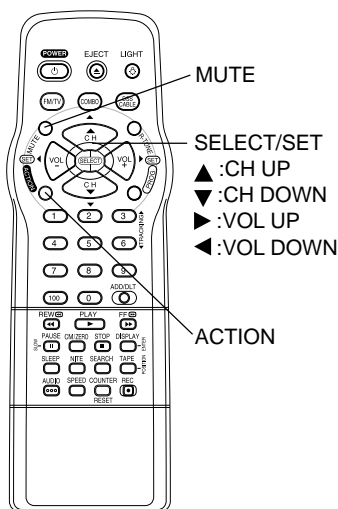
**Record:** Record normally.

Closed Caption/ Text signal, if present, is recorded automatically.

**Playback:** Start playback. Do above steps to select desired caption mode.



**\*Important:** If a remote control button does not work when pressed, press the COMBO button on the remote and try the button again.



Model PV-C2062 remote shown.

## Caption On Mute Feature

Closed Caption narration, if available, is displayed when MUTE button is pressed for silence.

**1 Press ACTION** to display MAIN MENU.

**2**

MAIN MENU

TV	VCR	LANGUAGE
CH	CLOCK	EXIT

SELECT : ▲ ▼ ◀ ▶  
SET : ACTION

1) Press ▲▼◀▶ to select "TV."

2) Press **ACTION** to display SET UP TV screen.

**3**

SET UP TV

LOCK  
**CAPTION**

INPUT SELECT	: TUNER
VIDEO ADJUST	: EXT
FM ANTENNA	: EXT

SELECT : ▲ ▼  
SET : ▶  
END : ACTION

1) Press ▲▼ to select "CAPTION".

2) Press ▶ to display CAPTION screen.

**4**

CAPTION

CAPTION MODE : **OFF**  
CC ON MUTE : CAP C1

SELECT : ▲ ▼  
SET : SET  
END : ACTION

1) Press ▲▼ to select CAPTION MODE.

2) Press ▶ repeatedly to select "OFF."

**5**

CAPTION

CAPTION MODE : OFF  
**CC ON MUTE : CAP C1**

SELECT : ▲ ▼  
SET : SET  
END : ACTION

1) Press ▲▼ to select CC ON MUTE.

2) Press ▶ repeatedly to select desired mode.

- Each press of ▶ will change the display as shown left.
- The caption may be broadcast over CAP C1 or C2.

NO → CAP C1

← CAP C2

**6 Press ACTION** three times to return to the normal screen.

**7 Press MUTE** to mute the sound and display closed captioning.

- To cancel, press MUTE again.



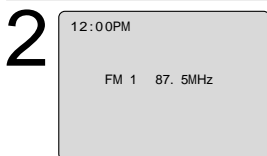
# FM Radio

**\*Important:** If a remote control button does not work when pressed, press the COMBO button on the remote and try the button again.

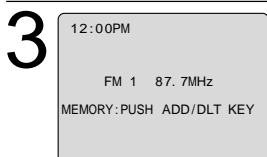
**FM Radio is ...** This unit has an FM radio with built-in antenna, 9 station preset, and a band range of 87.5 ~ 108.1 MHz. You can even set the On-Timer (page 16) to wake up to your favorite radio station.

## FM Radio Setup

**1** Press **FM/TV\*** on the remote or press **TIMER/FM** twice on the unit to display FM radio mode.



Press a number key (1~9) to select the FM number.



**1) Press CH ▲▼** to select the desired radio station. (Each press changes frequency 200 KHz.)

**2) Press ADD/ DLT** to set the radio station.

**Hold down CH ▲ or ▼** for a few seconds, then release to quickly scan for FM stations in your area.

- To cancel, press CH ▲ or ▼ while in search mode.

**To Make Corrections,** select station with a number key, then do step 3 again.

**To exit FM mode,** press FM/TV on the remote or TIMER/FM twice on the unit.

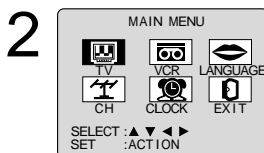
### Note

- FM radio cannot be recorded on a Video cassette.
- You may get better reception by repositioning the unit.
- You cannot select FM Radio mode during playback or record, or while a blue back screen (PROG, ACTION, MENU) is displayed.
- Once stations are set, the selected station and current time are displayed when FM Radio mode is entered. To remove time, press DISPLAY. If DISPLAY is pressed again, the unit status screen appears.

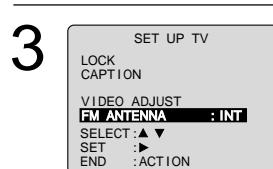
## FM ANTENNA Setup

**Make sure FM tuning is done correctly (see FM Radio Setup).**

**1** Press **ACTION** to display MAIN MENU.



- 1) Press ▲▼◀▶** to select "TV."
- 2) Press ACTION** to display SET UP TV screen.



- 1) Press ▲▼** to select FM ANTENNA.
- 2) Press ►** to select "INT (INTERNAL)" or "EXT (EXTERNAL)" whichever sounds the best.

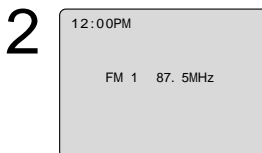
■ For cable TV users  
=> "INT"

■ For antenna users  
=> "EXT"

**4** Press **ACTION** twice to end setup.

## How to use the FM radio

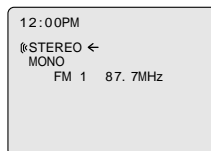
**1** Press **FM/TV** on the remote or press **TIMER/FM** twice on the unit to display FM radio mode.



Press a Number key (1~9) to select a preset FM number (see steps 2 and 3 on this page).

**To cancel,** press FM/TV on the remote or TIMER/FM twice on the unit.

## To select Audio Mode for FM Radio

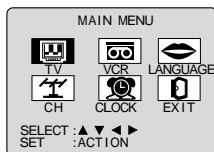


Press **AUDIO** repeatedly to select "STEREO" or "MONO" in FM Radio mode.

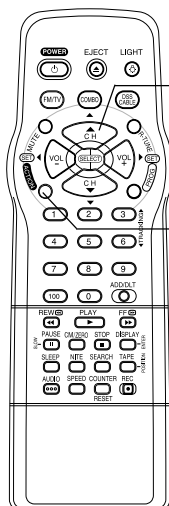


# Picture Adjustment

## 1 Press ACTION to display MAIN MENU.

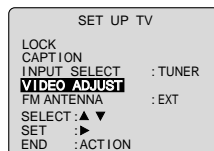


- 1) Press ▲▼◀▶ to select "TV."
- 2) Press ACTION to display SET UP TV screen.



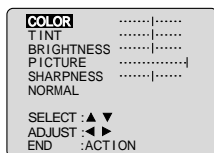
SELECT/SET  
▲:CH UP  
▼:CH DOWN  
▶:VOL UP  
◀:VOL DOWN  
ACTION

## 3

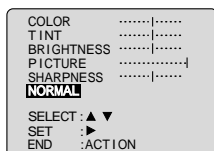


- 1) Press ▲▼ to select VIDEO ADJUST.
- 2) Press ▶ to display screen.

## 4



- 1) Press ▲▼ to select an adjustment item. (See below left.)
- 2) Press ▶ to adjust.



**To Reset Picture Controls.**  
Press ▲▼ and ▶ to select and set "NORMAL."  
All controls return to their factory settings.

Model PV-C2062 remote shown.

## Picture Adjustment

- **COLOR Control**  
Adjust color intensity.
- **TINT Control**  
Adjust for natural flesh tones.
- **BRIGHTNESS Control**  
Adjust picture brightness.
- **PICTURE Control**  
Adjust picture intensity by adjusting both contrast and color level in the proper balance.
- **SHARPNESS Control**  
Adjust picture sharpness.

## 5

Press ACTION three times to exit.



# Timer Recording

You can set up to 8 programs to be recorded while you are away.

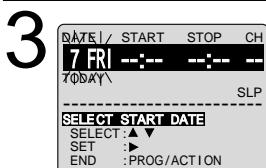
**1 Press PROG\*** to display SET PROGRAM screen.



1) Press **▲▼** to select **TIMER PROGRAMMING**.

2) Press **▶** to display screen.

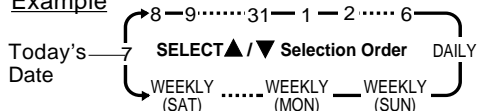
- If a program is already in memory, press **▲▼**, and **▶** to select an unused program number.



Press **▲▼** to select and **▶** or **◀** to set the recording DATE.

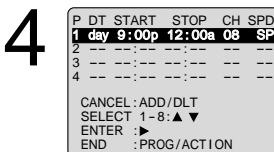
- 1~31 = One time
- DAILY = MON-FRI
- WEEKLY SUN-SAT = Same time once a week

Example



**Repeat step 3 to set:**

- start time, stop time
- Channel (or LINE for outside source)
- Speed (SP, LP, SLP)



Press **PROG** (or **ACTION**) to end the program.

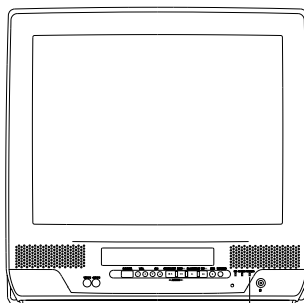
**To Enter More Programs,** press **▲▼** to select and **▶** to set a blank program number, and then repeat step 3.

**5 Press PROG twice (or ACTION) to exit this mode.**

- If you're using a cable box, make sure that it is tuned to the desired channel and the power is left on for timer recording.
- PROG TIMER indicator lights on the unit.

## ✓ Ready Check List

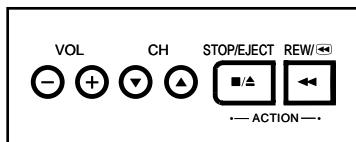
- ☐ All connections are made.
- ☐ Your unit is plugged in.
- ☐ The clock is set to correct time.
- ☐ The tape is long enough.
- ☐ The record tab is in place.



PROG TIMER indicator

## Timer Recording Using unit Buttons

**You can set a Timer Recording using ACTION key on the unit. (See page 11.)**



- 1 Press **STOP/EJECT** and **REW** together without a tape inserted to display **MAIN MENU**.
- 2 Press **▲▼ + -** to select "VCR" and **STOP/EJECT** and **REW** together to display **SET UP VCR** screen.
- 3 Press **▲▼** to select "TIMER PROGRAM" and **+** to display the **TIMER PROGRAM** screen.
- 4 Repeat main steps 3 ~ 5.



**\*Important:** If a remote control button does not work when pressed, press the COMBO button on the remote and try the button again.

### Cancel a Timer Recording: (Recording is in progress)

Hold down STOP for a few seconds to cancel the Timer Recording.

- Any future daily or weekly recordings will be performed as programmed.

### Review, Replace or Clear Program Contents : (Recording is not in progress)

**1** Repeat steps 1 and 2 on page 22.

**2**

P	DT	START	STOP	CH	SPD
1	day	9:00p	12:00a	08	SP
2	8	10:00a	12:00p	125	SP
3	10	8:00p	9:00p	10	SP
4	SU	9:00p	10:00p	L	LP

CANCEL : ADD/DLT  
SELECT 1-8: ▲▼  
ENTER : ►  
END : PROG/ACTION

Press ▲▼ to select the desired program.

**3**

### To Replace program...

DATE /	START	STOP	CH
8 SAT	9:00P	12:00A	08
700XY\			ABC SP

SELECT START DATE  
SELECT : ▲▼  
SET : ◀▶  
END : PROG/ACTION

- Press ► to display.
- Press ▲▼ to select and press ◀ or ▶ to set new program contents.
- Press PROG (or ACTION).

### To Clear program...

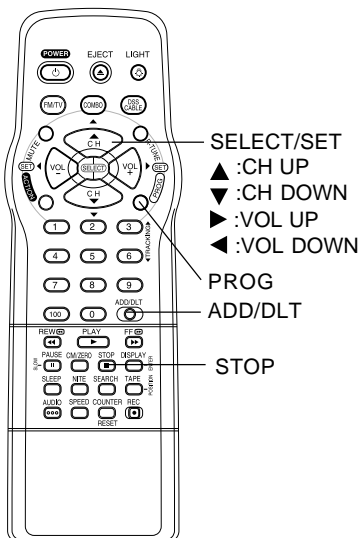
P	DT	START	STOP	CH	SPD
1	--	--	--	--	--
2	8	10:00p	12:00a	125	SP
3	10	8:00p	9:00p	10	SP
4	SU	9:00p	10:00p	L	LP

SELECT 1-8: ▲▼  
ENTER : ►  
END : PROG/ACTION

Press ADD/DLT.

**4**

Press **PROG** twice (or **ACTION**) to exit this mode.



Model PV-C2062 remote shown.

### Notes

- 2 minutes before Timer recording is performed, "PLEASE PREPARE FOR TIMER REC" appears and/or the PROG TIMER Indicator flashes. Be sure a cassette with record tab is loaded and the unit is in Stop mode.
- If the start times of two programs overlap, the lower numbered program will have priority.
- If the start time for a Timer Recording comes up during a normal recording or One Touch Recording (page 12), the Timer Recording will not be performed.
- If there is a power interruption of more than one minute, the recording may not be performed or continued.
- If "INCOMPLETE" appears after all items have been set, check all entries and make necessary corrections.



# Tape Operation

## Search System is ...

Each time a recording is made, an invisible index mark is placed on the tape. When timer recordings are made, program index and information are also included. These index marks can be used to access or scan recordings.

### Index Search

Go directly to the desired recording.

1

INDEX SEARCH  
ENTER INDEX NUMBER: 1  
USING 1-9 KEYS

FORWARD SEARCH: FF  
REVERSE SEARCH: REW  
NEXT: SEARCH  
EXIT: STOP

**Press SEARCH\*** in Playback or Stop mode to display INDEX SEARCH screen, and then **press NUMBER Keys** to select the recording number.

- To calculate number, see below.

**Press FF or REW** to start search.

2

INDEX SEARCH

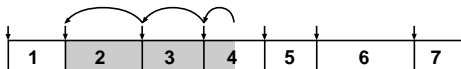
FORWARD SEARCH: FF  
REVERSE SEARCH: REW

Play begins at search end. To search forward or back 1 index, **press FF or REW** while screen left is displayed (10 sec.).

### ■ To calculate the Index Number

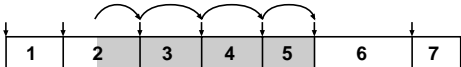
#### Example 1:

To go to rec. 2 from rec. 4, enter 3 and press REW.



#### Example 2:

To go to rec. 6 from rec. 2, enter 4 and press FF.



NOTE: ↓ indicates start points of each recording.

### Notes

- Make each entry within 10 seconds, or the Index Search mode will be canceled.
- If Index Search is started very close to an index mark, that index mark may not be counted in the search.

### Program End Search

Locates end point of recording for continuity.

1

**Press SEARCH** twice in Playback or Stop mode to display PROGRAM END SEARCH screen

2

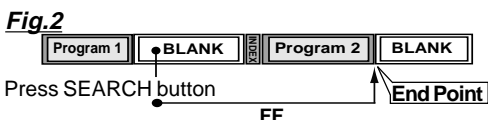
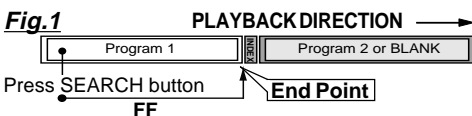
PROGRAM END SEARCH

SEARCH START: FF

EXIT: SEARCH

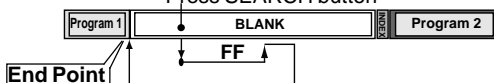
**Press FF** to start search.

Example of Program End Search operation.



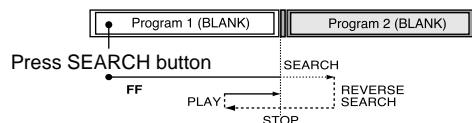
**Fig.3** If search exceeds a few seconds in BLANK area.

Press SEARCH button



### Upon locating end point...

The unit searches slightly past end point, reverse searches, and plays the last few seconds of the program, then stops.

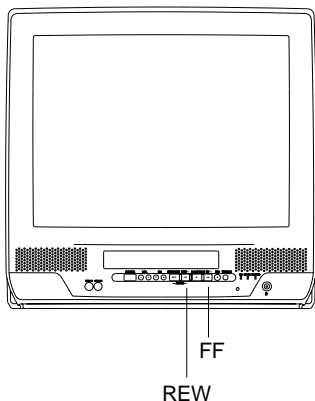


### Notes

- If Program End Search is started very close to an index mark, that mark may be skipped over.
- To cancel, press PLAY or STOP.



**\*Important:** If a remote control button does not work when pressed, press the COMBO button on the remote and try the button again.



## Auto Operation Functions

### ■ Auto Shut Off

No broadcast signal in TV (Only when Weak Signal Display is set to OFF), blank tape is Played for 5 minutes  
=> Power turns off

- This feature is canceled if any button is pressed during above mode.

### ■ Auto Playback

Insert a tape in Power off mode  
=> Power turns on

- Playback begins if tape has no record tab.

### ■ Auto Rewind

Tape reaches its end  
=> Rewind => Stop

### ■ Playback Auto Eject (Repeat Play is "OFF")

Tape with no record tab reaches its end  
Rewind => Stop => Eject

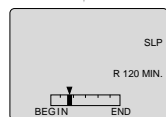
## Tape Position Display

To find out present tape position and amount of tape remaining.

**Tape position is displayed for VHS-C Cassettes type, tapes under 30 minutes, and some other tapes, but the position is not correct.**

### 1 Press TAPE POSITION to detect current tape position.

DETECTING TAPE POSITION



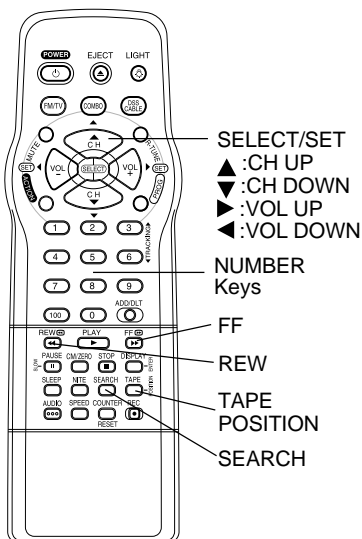
- "DETECTING TAPE POSITION" is displayed only when a cassette is first inserted and it takes several seconds for correct tape position to appear.
- The present tape position indication and amount of tape remaining (according to tape speed) is displayed.
- Tape remaining time display may not be precise.

Advanced Operation

### 2 Press TAPE POSITION (or wait 5 seconds) to return to normal screen.

#### Note

- This function cannot display exact amount of tape remaining for tapes 30 minutes or less, or for tapes over 120 minutes in length.



Model PV-C2062 remote shown.



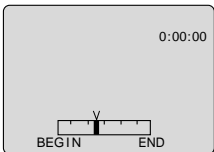
# Tape Operation (continued)

**\*Important:** If a remote control button does not work when pressed, press the COMBO button on the remote and try the button again.

## Zero Search

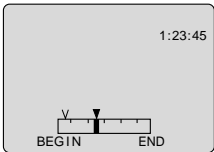
To quickly return to a specific tape counter location.

**1 Press DISPLAY\*** during playback to display the Counter.

**2**  **Press COUNTER RESET** at the desired position to reset to "0:00:00."

**3 Continue playback, rewind, or fast forward.**

**4 Press STOP.**

**5**  **Press CM/ZERO** in stop mode to start ZERO SEARCH.

• **V**: Present position mark  
• **V**: Zero position mark

- Unit goes into FF or REW mode and stops at the last point the Counter was set to 0:00:00.

### Note

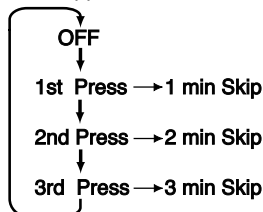
- If a blank portion exists on the tape, and depending on the position of the **V** mark, the **V** mark display may be out of position.

## Commercial Skip

By pressing the CM/ZERO button in Playback mode you can skip over 1 to 3 minutes of recorded tape in just a few seconds.

**1 Press CM/ZERO** repeatedly to select skip time in Play mode.

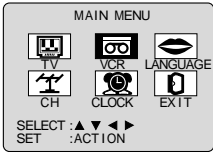
- No indication appears.

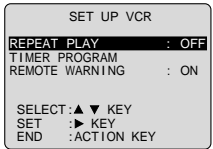


## Repeat Play

Set to see a recording over and over.

**1 Press ACTION** to display MAIN MENU.

**2**  **1) Press ▲▼◀▶** to select "VCR."  
**2) Press ACTION** to display SET UP VCR screen.

**3**  **1) Press ▲▼** to select "REPEAT PLAY."  
**2) Press ▶** to set REPEAT PLAY "ON" or "OFF."

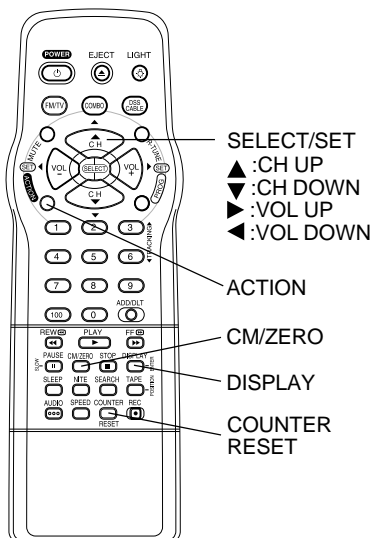
**4 Press ACTION** twice to end setup.

### Notes

- Playback repeats when tape end is reached or unrecorded portion over 30 seconds is detected.
- During playback, you may also press PLAY/REPEAT repeatedly on the unit to select REPEAT "ON" or "OFF."



# Special VCR Features

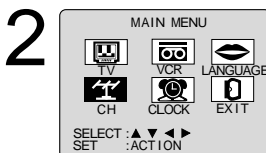


Model PV-C2062 remote shown.

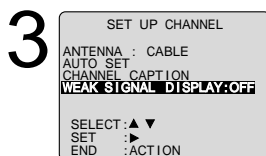
## Weak Signal Display ON/OFF

When "ON" is selected, the picture is displayed even when a broadcast signal is weak or non-existent.

**1 Press ACTION** to display MAIN MENU.



**1) Press ▲▼◀▶** to select "CH."  
**2) Press ACTION** to display SET UP CHANNEL screen.

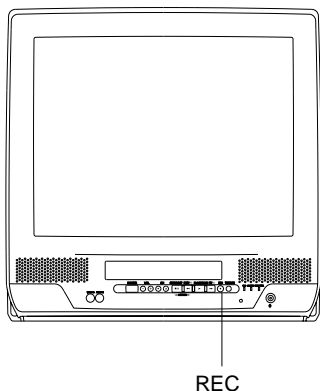


**1) Press ▲▼** to select WEAK SIGNAL DISPLAY.  
**2) Press ▶** to set "ON" or "OFF."

### Notes

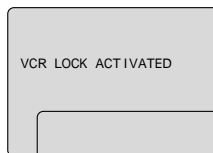
- "ON" = Picture is displayed regardless of signal condition, and may not always be clearly visible.
- "OFF" = Screen turns solid blue when signal is absent or weak.
- If unit is connected to equipment which has blue back feature, selecting "ON" will have no effect on the other equipment.

**4 Press ACTION** twice to return to the normal screen.



## VCR Lock

All operations are prohibited except Timer recording and tape eject. Useful for families with small children.



VCR LOCK OFF

In stop mode, **hold down REC** on the unit without a cassette inserted for 7 seconds to turn "ON." Please ignore NO CASSETTE warning.

Repeat above with or without cassette to turn "OFF."

- VCR Lock is canceled automatically after about 24 hours if clock is set.
- "Auto Power On" is not prohibited when VCR Lock is activated.



# Special VCR Features (continued)

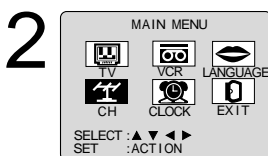
**\*Important:** If a remote control button does not work when pressed, press the COMBO button on the remote and try the button again.

## Channel Caption is ...

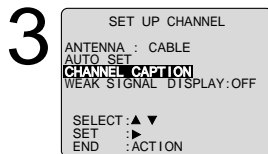
Station names, e.g. ABC, TNN, etc. are set so they will appear when a channel is selected. Choose 24 preset names.

### Channel Caption

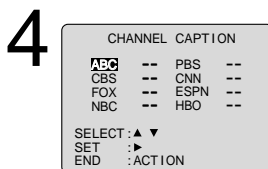
**1** Press **ACTION**\* to display MAIN MENU.



**1)** Press **▲▼◀▶** to select "CH."  
**2)** Press **ACTION** to display SET UP CHANNEL screen.

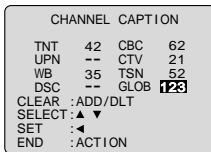


**1)** Press **▲▼** to select CHANNEL CAPTION.  
**2)** Press **▶** to display screen.



**1)** Press **▲▼** to select a station.  
**2)** Press **▶** to move cursor to the right.  
**3)** Press **▲▼** to select channel number.  
**4)** Press **◀** to set preset captions.

• Repeat step 4 until the Caption List is complete.



## To Make Corrections

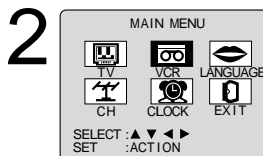
Press **▲▼**, then **▶** to select channel number. Press **▲▼** to change, or ADD/DLT to delete.

**5** Press **ACTION** four times to end setup.

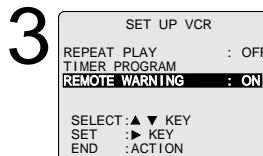
## Remote Warning ON/OFF

When Universal Remote Control (page 32) is used, and this feature is set to "ON," a warning appears whenever an invalid key is pressed in DSS or Cable mode.

**1** Press **ACTION** to display MAIN MENU.



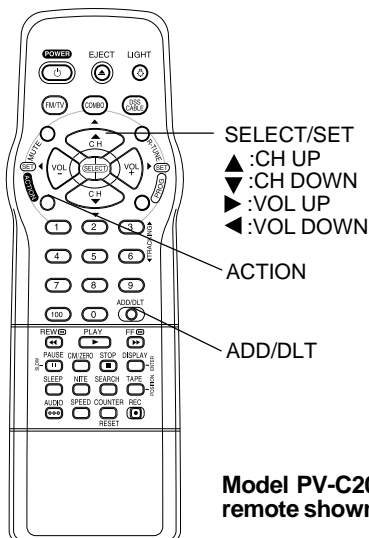
**1)** Press **▲▼◀▶** to select "VCR."  
**2)** Press **ACTION** to display SET UP VCR screen.



**1)** Press **▲▼** to select REMOTE WARNING.  
**2)** Press **▶** to set "ON" or "OFF."

• "REMOTE WARNING : OFF"  
 -> Remote warning will not appear even if invalid key is pressed.

**4** Press **ACTION** twice to return to normal screen.



Model PV-C2062 remote shown.



# V-Chip Control Feature

## Process of V-Chip Control

**Enter Code** → **Setup** → **Blocking**

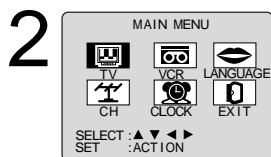
## V-Chip Control Feature is...

This unit has a built-in V-Chip Control which allows you to block unwanted TV usage based on US MOVIES and US TV PROGRAMS Ratings.

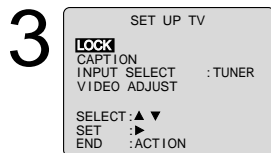
### Enter Secret Code

A 4-digit code must be entered to view a blocked program or change rating settings.

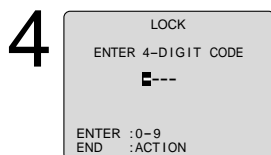
**1 Press ACTION** to display MAIN MENU.



- 1) Press ▲▼◀▶ to select "TV."
- 2) Press ACTION to display SET UP TV screen.



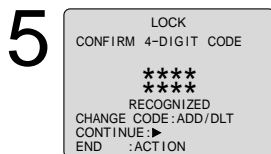
- 1) Press ▲▼ to select LOCK.
- 2) Press ▶ to display screen.



- 1) Press **NUMBER Keys** to enter your secret code.
- 2) Enter **same code** again for confirmation.

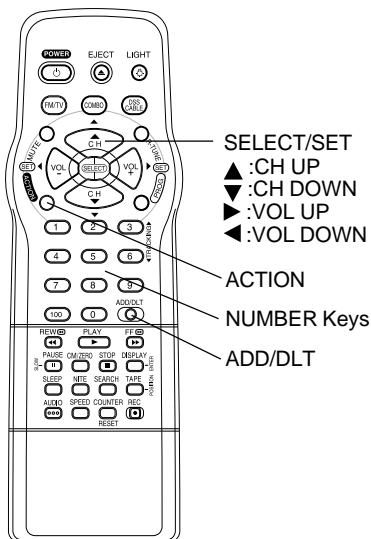
**To Make Corrections**  
Press ◀ repeatedly to move the cursor. Press number keys to make the correction.

- Step 2) not necessary when changing rating or secret code.
- Take care that you are not observed entering the secret code.



Press ▶ to display US Ratings menu (see page 30).

Or  
**Press ACTION** three times to exit.



Model PV-C2062 remote shown.

### Changing your secret code

- You will need your current code. Do steps 1 ~ 4. In step 5, press ADD/HLT to clear current code. Repeat steps 4 and 5 to enter new code.

### Notes

- DO NOT forget your secret code.
- Once ratings are set, restricted tapes or programs cannot be accessed unless the secret code is entered.



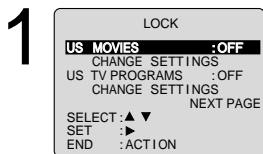
# V-Chip Control Feature (continued)

If LOCK menu is not displayed, do "Enter Secret Code" steps on page 29.

Process of V-Chip Control Feature

Enter Code → Setup → Blocking

## Setup US MOVIES Ratings

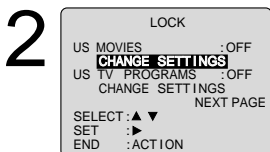


- 1) Press ▲▼\* to select US MOVIES.
- 2) Press ► to set "ON" or "OFF."

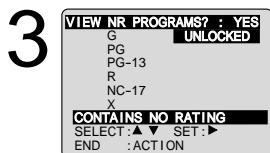
- "ON" => V-Chip Control is activated.
- "OFF" => V-Chip Control is deactivated.

### Note

- "NEXT PAGE" displays CANADIAN V-Chip setting menu. Not necessary except when viewing Canadian tapes or broadcasts.



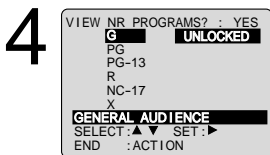
- 1) Press ▲▼ to select CHANGE SETTINGS.
- 2) Press ► to display screen.



- 1) Press ▲▼ to select VIEW NR PROGRAMS?.
- 2) Press ► to set "YES" or "NO."

### NR (Not Rated) PROGRAMS

Some movies, such as old movies or foreign movies usually have no ratings.



- Press ▲▼ to select and ► to set ratings to be blocked.  
(See ratings chart next page.)

- 5 Press ACTION to redisplay LOCK menu and continue with US TV PROGRAMS Ratings Setup (this page).

Or, press ACTION four times to exit.

## Setup US TV PROGRAMS Ratings

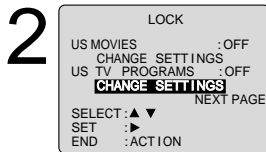


- 1) Press ▲▼ to select US TV PROGRAMS.
- 2) Press ► to set "ON" or "OFF."

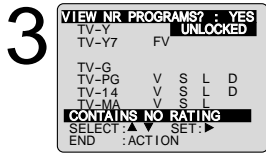
- "ON" => V-Chip Control is activated.
- "OFF" => V-Chip Control is deactivated.

### Note

- "NEXT PAGE" displays CANADIAN V-Chip setting menu. Not necessary except when viewing Canadian tapes or broadcasts.



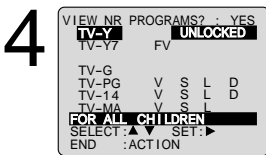
- 1) Press ▲▼ to select CHANGE SETTINGS.
- 2) Press ► to display screen.



- 1) Press ▲▼ to select VIEW NR PROGRAMS?.
- 2) Press ► to set "YES" or "NO."

### NR (Not Rated) PROGRAMS

Some TV shows, such as news, sports, weather, bulletins, emergency information usually have no ratings.



- Press ▲▼ to select and ► to set ratings to be blocked.  
(See ratings charts next page.)

### Note

- You may select from standard TV ratings (chart 1), or customize to a specific content rating (chart 2).

- Ratings highlighted in Green will be blocked. Ratings in white letters will not be blocked.

- 5 Press ACTION four times to exit this mode.



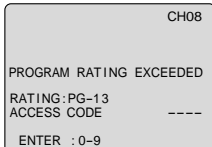
**\*Important:** If a remote control button does not work when pressed, press the COMBO button on the remote and try the button again.

## Process of V-Chip Control Feature

Enter Code → Setup → Blocking

### Blocking Message

<When V-Chip Control is activated>



- If a program or movie exceeds the ratings you have set, a message will appear on a black background and sound is muted.

### To View a Blocked Program / Movie [Temporarily Deactivate V-Chip Control]

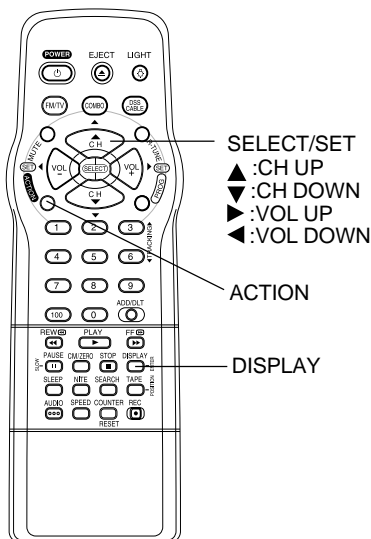
Enter your secret code (ACCESS CODE) in the Blocking Message screen.

- V-Chip Control is reactivated when power is turned off or power failure occurs.

### [Deactivate V-Chip Control]

Enter your secret code (steps 1-4 page 29).

Then, set US MOVIES and/or US TV PROGRAMS to "OFF" using ▲▼ and ► keys. (Ratings set on page 30 is retained and will be in effect when V-Chip Control is activated again.)



Model PV-C2062 remote shown.

### US MOVIES RATINGS

<b>G</b>	<b>GENERAL AUDIENCE:</b> All ages admitted.
<b>PG</b>	<b>PARENTAL GUIDANCE:</b> Some material may not be suitable for children.
<b>PG-13</b>	<b>PARENTS CAUTIONED:</b> Some material may be inappropriate for children under 13.
<b>R</b>	<b>RESTRICTED:</b> Children under 17 must be accompanied by a parent or adult.
<b>NC-17</b>	<b>OVER AGE 17 ONLY:</b> No one 17 and under admitted.
<b>X</b>	<b>ADULTS ONLY:</b>

### US TV PROGRAMS RATINGS:Chart 1

<b>TV-Y</b>	<b>FOR ALL CHILDREN:</b> Content specifically geared to young viewers ages 2-6.
<b>TV-Y7</b>	<b>FOR AGE 7 AND OLDER:</b> May contain mild physical or comedic violence which may frighten children under 7.
<b>TV-G</b>	<b>GENERAL AUDIENCE:</b> Contains little or no violence, strong language, or sexual dialogue or situations.
<b>TV-PG</b>	<b>PARENTAL GUIDANCE:</b> May contain infrequent coarse language, limited violence, some suggestive sexual dialogue and situations.
<b>TV-14</b>	<b>PARENTS CAUTIONED:</b> May contain sophisticated themes, sexual situations, strong language, and more intense violence.
<b>TV-MA</b>	<b>MATURE AUDIENCE:</b> May contain mature themes, profane language, graphic violence, and sexual situations.

Advanced Operation

### US TV PROGRAMS RATINGS: Chart 2

<b>FV</b>	Fantasy Violence
<b>V</b>	Violence
<b>S</b>	Sexual Situations
<b>L</b>	Adult Language
<b>D</b>	Sexually Suggestive Dialogue



# Cable Box Universal Remote Control Feature

## Universal Remote Control is...

The Remote Control may be set up to control some basic DSS or Cable box functions.

## The Universal Remote Control Setup

**1 Find your DSS box or Cable box Brand Code Number from one of the charts on the next page.**

**2 Setup remote.**  
**Hold down DSS CABLE and press number keys to enter code.**

- For code 100 or greater, first press 100 key, then the remaining digits. E.g. for 102, press 100, then press 0, and then press 2.

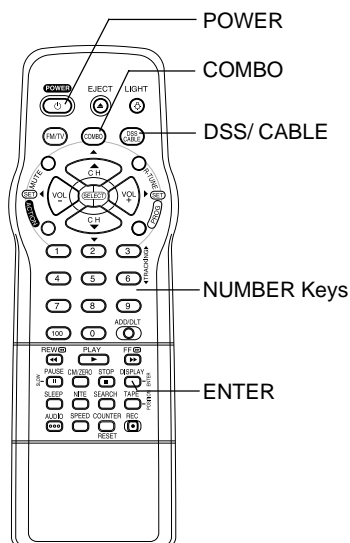
**3 Confirm code entry.**

**Press POWER\*** to turn selected unit ON or OFF.

- See below for controllable functions in each mode.

### Notes

- Please repeat the Universal Remote Control Setup after replacing remote control batteries.
- The remote control will not operate all DSS receivers or Cable Boxes made by the manufactures listed. If you get no results, your particular brand cannot be controlled.



Model PV-C2062 remote shown.

## Using the Universal Remote Control

Once the remote control has been properly set up, you can select COMBO, DSS or CABLE mode depending on which functions you wish to control. (See below.)

**Press COMBO or DSS CABLE** on the remote control to select the desired mode. (See below for buttons available in each mode.)

### Set to COMBO:

- All TV and VCR functions.

### Set to DSS CABLE:

- Basic VCR functions, e.g. PLAY, REC, etc.
- CABLE/DSS functions, e.g. POWER, ENTER, number keys (except 100 key), CH UP/DOWN.



**\*Important:** If a remote control button does not work when pressed, press the COMBO button on the remote and try the button again.

## DSS Brand Code Numbers

Toshiba .....	92	Magnavox/Uniden 2 .....	95	Sony .....	98, 105
Hitachi/Hughes .....	93	Panasonic .....	96		
Magnavox/Uniden 1 .....	94	RCA .....	97		

## Cable Box Brand Code Numbers

Archer .....	05, 06, 01, 44, 63, 91, 126	Matsushita .....	16, 17, 97, 109	Sheritech .....	27
Cabletenna ...	01, 44, 63, 91, 126	Movietime .....	32, 39, 42, 44, 126, 38, 40	Signal .....	26, 112
Cableview .....	63, 44, 42, 30, 52, 04, 124, 126	NEC .....	38, 40, 32	SL Marx .....	32, 40, 42, 06, 43, 44, 52, 63, 126
Century ..	51, 44, 59, 75, 126	NOVAVISION .....	08, 09, 61, 53, 87	Sprucer .....	16, 17, 97, 109
Citizen .....	63, 44, 42, 30, 52, 04, 124, 126	NSC .....	38, 40, 32	Standard Components .....	32, 39, 42, 44, 126
Curtis .....	08, 09, 61, 53, 87	Oak .....	46, 11, 129	Stargate ....	32, 40, 63, 44, 42, 30, 52, 04, 06, 124, 126
Diamond ..	01, 44, 63, 91, 126	Oak Sigma .....	46, 11, 129	Sylvania .....	19
Drake .....	67	Panasonic .....	16, 17, 97, 109	Teknika .....	74
Eagle .....	13, 22, 58, 62, 20, 40, 26, 107	Philips .....	07, 13, 20, 23, 24, 50, 128, 129	Telecaption .....	77, 127
Eastern .....	28, 130	Pioneer .....	05, 06	Televue .....	32, 40, 42, 06
GC Brand .....	63, 44, 42, 30, 52, 04, 124, 126	Pulsar .....	63, 44, 42, 30, 52, 04, 124, 126	Texscan .....	18, 19
Gemini .....	04, 124	Quest .....	05, 06	Tocom ..	33, 34, 01, 42, 66, 91
General Electric .....	57, 01	Radio Shack .....	51, 44, 59, 75, 126	Toshiba .....	36
General Instruments ..	01, 02, 03, 04, 34, 65, 67, 68, 115, 117, 118, 124, 91	RCA .....	16, 17, 97, 109	Uniden Satellite .....	65
Hamlin ..	14, 15, 28, 41, 102, 103, 104, 108, 130	Realistic ...	51, 44, 59, 75, 126	Unika .....	01, 44, 63, 91, 126
Hitachi .....	31	Recoton ...	51, 44, 59, 75, 126	Universal .....	42, 43, 44, 52, 63, 126
Jasco .....	04, 124	Regal .....	14, 15, 28, 41, 102, 103, 104, 108, 130	Videoway .....	07, 23, 50, 129
Jerrold ....	01, 02, 03, 04, 34, 55, 83, 106, 65, 67, 68, 115, 117, 118, 124, 91	Regency .....	28, 130	Vid Tech .....	64
Macom .....	31	Rembrandt .....	01, 32, 39, 42, 44, 63, 126	Vidtek .....	64
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		Samsung ...	05, 32, 40, 42, 06	Zenith .....	07, 23, 50, 129
		Scientific Atlanta .....	08, 09, 61, 53, 87		

### Notes

- In DSS or CABLE mode, it may be necessary to press ENTER after pressing number keys for channel selection.
- In DSS or CABLE mode, POWER, CH Up/Down, number Keys, ACTION, PROG, DISPLAY, SEARCH, R-TUNE, FM/TV, or ADD/HLT are not available. Press COMBO to use these functions.
- Depending on your DSS receiver or Cable box brand, some of the functions listed may not be remote controllable.
- Some DSS receiver or Cable box brands require you to turn on the power manually.
- Due to changes in infra-red commands used by manufacturers, some brands have several codes. If your unit does not respond to the first code, please try the next one.

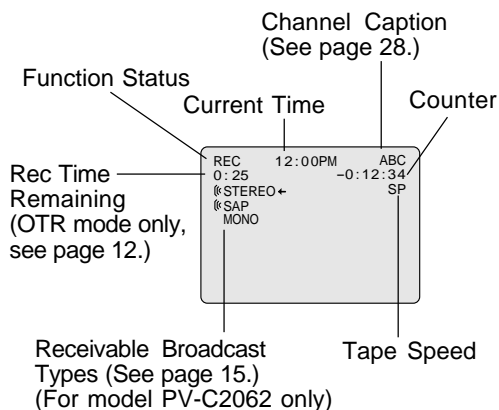


# On-Screen Display (OSD)

## VCR Status & Clock Display

### Press DISPLAY

to display or remove the overlay.

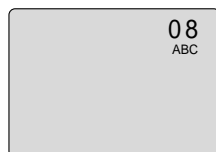


## Blue Screen Display

Whenever a blank section of a tape comes up in Play mode, or when the selected channel has no broadcast signal with the Weak Signal Display set to "OFF" (see page 27), the screen will turn solid blue.

## Channel & Function Display

When a function button is pressed (PLAY, FF, etc.) or you change channels, the unit mode or channel number will be displayed. (Some station names may also appear if Channel Caption is set. See page 28.)



## Warning and Instruction Displays

These displays will alert you to a missed operation or provide further instructions.

OSD	Caution	Page
PLEASE SET CLOCK BEFORE PROGRAMMING	• If you attempt to set or review a Timer Recording, or set the On-Timer and the Clock is not set...	8 - 11
CHECK CASSETTE RECORD TAB	• If you press REC, and a cassette is inserted with no record tab...	3, 12
TO CANCEL TIMER REC HOLD DOWN STOP KEY FOR APPROX 3 SEC	• If you press STOP during a Timer Recording...	23
NO CASSETTE PLEASE INSERT A CASSETTE	• If you press PLAY, FF, REW, or REC without a cassette inserted...	12
PLEASE PREPARE FOR TIMER REC	• If the unit is not in Stop mode or a cassette with record tab is not inserted two minutes before a Timer Recording is about to begin...	22, 23
VIDEO HEADS MAY NEED CLEANING PLEASE INSERT HEAD CLEANING CASSETTE OR REFER TO MANUAL END: PLAY KEY	• If head cleaning becomes necessary while playing back a tape...	4
VCR LOCK ACTIVATED	• If you press a function button other than STOP/EJECT or POWER while the unit is in VCR Lock mode...	27



# Before Requesting Service

Check the following points once again if you are having trouble with your unit.

Power	Correction
No power...	<ul style="list-style-type: none"> <li>• Completely insert Power Plug into an AC outlet.</li> <li>• Set POWER button to ON.</li> </ul>
Monitor	Correction
No picture or sound...	<ul style="list-style-type: none"> <li>• Make sure your antenna system (TV or CABLE), is correctly set. (P. 8)</li> <li>• Completely insert Power Plug into an AC outlet.</li> <li>• Set POWER button to ON.</li> </ul>
Poor picture with normal sound...	<ul style="list-style-type: none"> <li>• Adjust BRIGHTNESS, SHARPNESS, and PICTURE controls in the SET UP TV menu. (P. 21)</li> </ul>
Poor sound with normal picture...	<ul style="list-style-type: none"> <li>• Adjust VOLUME control. (P. 14)</li> </ul>
Poor TV reception...	<ul style="list-style-type: none"> <li>• Adjust SHARPNESS and PICTURE controls in the SET UP TV menu. (P. 21)</li> </ul>
No color or poor color...	<ul style="list-style-type: none"> <li>• Adjust TINT and COLOR controls in the SET UP TV menu. (P. 21)</li> </ul>
Ghost (multiple) images...	<ul style="list-style-type: none"> <li>• Install a directional antenna.</li> </ul>
TV programs cannot be watched...	<ul style="list-style-type: none"> <li>• Make sure the selected channel is in unit's memory. (P. 10, 11)</li> </ul>
Channel cannot be selected...	<ul style="list-style-type: none"> <li>• Only the channel being recorded can be viewed on this unit.</li> </ul>
VCR	Correction
TV program cannot be recorded...	<ul style="list-style-type: none"> <li>• Make sure your antenna system (TV or CABLE), is correctly set. (P. 8)</li> <li>• Make sure cassette record tab is intact. (P. 3)</li> <li>• Check that clock is set to current time and date.</li> </ul>
Timer recording cannot be performed...	<ul style="list-style-type: none"> <li>• Make sure DSS/CABLE box (if used) is left on and tuned to channel to be recorded.</li> <li>• Set recording Start/Stop times correctly. (P. 22-23)</li> <li>• Timer recording may not be performed or continued if a power interruption of more than 1 minute occurs before or during a Timer recording even after power is restored.</li> </ul>
No playback picture, or the playback picture is noisy or contains streaks...	<ul style="list-style-type: none"> <li>• Adjust TRACKING control in either direction. (P. 4)</li> <li>• Try Head Cleaning. (P. 4)</li> </ul>
VCR cannot be controlled...	<ul style="list-style-type: none"> <li>• Make sure VCR LOCK is set to off. (P. 27)</li> <li>• Make sure unit is not in a Timer Record operation.</li> </ul>
Remote Control	Correction
Unit cannot be controlled...	<ul style="list-style-type: none"> <li>• Aim remote at remote sensor on unit (P. 7) so that signal is unobstructed.</li> <li>• Inspect the remote batteries. (P. 3)</li> <li>• Make sure VCR LOCK is set to off. (P. 27)</li> <li>• Exposing unit remote sensor to direct fluorescent or outdoor light may cause signal interference.</li> <li>• Check remote batteries.</li> </ul>
ACTION, PROG and FM/TV buttons cannot be selected...	
Miscellaneous	Correction
Video cassette cannot be inserted...	<ul style="list-style-type: none"> <li>• Insert the cassette window side up; record tab facing you.</li> </ul>
Video cassette cannot be removed...	<ul style="list-style-type: none"> <li>• Completely insert Power Plug into an AC outlet.</li> </ul>
Tape cannot be ejected or inserted...	<ul style="list-style-type: none"> <li>• Try ejecting or inserting the tape again after turning POWER off, then back on.</li> <li>• Make sure cassette record tab is intact. (P. 3)</li> </ul>
Video cassette ejects when a recording is started, or the power is turned off for timer recording...	
In Stop mode, the VCR motor (CYLINDER) continues to rotate...	<ul style="list-style-type: none"> <li>• To enable Quick Play mechanism, the VCR cylinder will rotate for about 3 minutes. This reduces response time from Stop to Play mode and from Play to Rewind Search mode.</li> </ul>
VCR cannot be controlled...	<ul style="list-style-type: none"> <li>• Make sure VCR LOCK is set to off. (P. 27)</li> </ul>

If you cannot resolve the problem, please call the Customer Satisfaction Center for product assistance at 1-800-211-PANA(7262).

To locate an authorized servicenter call toll free 1-800-211-PANA(7262) or send e-mail to : [consumerproducts@panasonic.com](mailto:consumerproducts@panasonic.com).



# Servicenter List

For Product Information, Operating Assistance, Literature Request, Dealer Locations, and all Customer Service inquiries please contact:

**1-800-211-PANA(7262)**, Monday-Friday 9am-9pm Saturday-Sunday 9am-7pm, EST.  
or send e-mail : [consumerproducts@panasonic.com](mailto:consumerproducts@panasonic.com)

**Web Site:** <http://www.panasonic.com>

You can purchase parts, accessories or locate your nearest servicenter by visiting our Web Site.

## Accessory Purchases:

**1-800-332-5368 (Customer Orders Only)**

**Panasonic Services Company 20421 84th Avenue South, Kent, WA 98032**

**(6 am to 5 pm Monday - Friday; 6 am to 10:30 am Saturday; PST)**

**(Visa, Master Card, Discover Card, American Express, Check)**

## Factory Servicenter Locations

### CALIFORNIA

6550 Katella Avenue  
Cypress, CA 90630  
800 Dubuque Avenue  
S. San Francisco,  
CA 94080

3878 Ruffin Road  
Suite A  
San Diego, CA 92123

### FLORIDA

3700 North 29th Avenue  
Suite 102  
Hollywood, FL 33020

### GEORGIA

8655 Roswell Road  
Suite 100  
Atlanta, GA 30350

### ILLINOIS

1709 North Randall Road  
Elgin, IL 60123

### MASSACHUSETTS

60 Glacier Drive,  
Suite G  
Westwood, MA 02090

### MINNESOTA

7850-12th Avenue South  
Airport Business Center  
Bloomington, MN 55425

### OHIO

2236 Waycross Road  
Civic Center Plaza  
Forest Park, OH 45240

### PENNSYLVANIA

2221 Cabot Blvd. West  
Suite B  
Langhorne, PA 19047

### TEXAS

13615 Welch Road  
Suite 101  
Farmers Branch,  
TX 75244

### WASHINGTON

20425-84th Avenue  
South  
Kent, WA 98032

### HAWAII

99-859 Iwaiwa Street  
Aiea, Hawaii 96701  
Phone (808) 488-1996  
Fax (808) 486-4369

## Service in Puerto Rico

**Matsushita Electric of Puerto Rico, Inc. Panasonic Sales Company/ Factory Servicenter:**

**Ave. 65 de Infanteria. Km. 9.5 San Gabriel Industrial Park Carolina, Puerto Rico 00985**

**Phone (787) 750-4300 Fax (787) 768-2910**

As of June 2001



# Limited Warranty

Panasonic Consumer Electronics Company,  
Division of Matsushita Electric Corporation  
of America, One Panasonic Way  
Secaucus, New Jersey 07094

Panasonic Sales Company,  
Division of Matsushita Electric of Puerto Rico, Inc.  
AVE. 65 de Infantería, Km. 9.5 San Gabriel  
Industrial Park Carolina, Puerto Rico 00985

## PANASONIC/QUASAR Video Products Limited Warranty

Panasonic Consumer Electronics Company or Panasonic Sales Company (collectively referred to as "the Warrantor") will repair or replace this product with new or refurbished parts or equivalent product, free of charge, in the USA or Puerto Rico, in the event of a defect in materials or workmanship as follows (all time periods commence from the date of the original purchase):

PRODUCT	PARTS	LABOR	SERVICE	CONTACT NUMBER
CAMCORDER	ONE (1) YEAR, EXCEPT CCD IMAGE SENSOR CCD IMAGE SENSOR - SIX (6) MONTHS	NINETY (90) DAYS	Carry-In or Mail-In	1-800-211-PANA(7262)
DVD/VCR DECK	ONE (1) YEAR	NINETY (90) DAYS	Carry-In or Mail-In	1-800-211-PANA(7262)
DIGITAL STILL CAMERA	ONE (1) YEAR, EXCEPT CCD IMAGE SENSOR CCD IMAGE SENSOR - SIX (6) MONTHS	NINETY (90) DAYS  NINETY (90) DAYS	Carry-In or Mail-In	1-800-272-7033
A/V MIXER	ONE (1) YEAR	NINETY (90) DAYS	Carry-In or Mail-In	1-800-211-PANA(7262)
TV/VCR, TV/DVD TV/DVD/VCR COMBINATION	ONE (1) YEAR, EXCEPT CRT CRT - TWO (2) YEARS	NINETY (90) DAYS NINETY (90) DAYS CRT - NINETY (90) DAYS	Carry-In: 21" CRT and Smaller In-Home or Carry-In: 22" CRT and Larger	1-800-211-PANA(7262)
TV/HDR COMBINATION	ONE (1) YEAR, EXCEPT CRT CRT - TWO (2) YEARS	NINETY (90) DAYS CRT - NINETY (90) DAYS	In-Home or Carry-In	1-888-843-9788

Batteries (if included) - New rechargeable batteries in exchange for defective rechargeable batteries for ten (10) days. Non-rechargeable batteries are not warranted.

Tape (if included) - New video cassette tape in exchange for a defective video cassette tape for five (5) days.

Memory cards (if included) - Exchange defective item for new one for ninety (90) days.

In-home, carry-in or mail-in service, as applicable, in the USA can be obtained during the warranty period by contacting a Panasonic Services Company (PASC) Factory Servicenter listed in the Servicenter Directory. Or call toll free contact number listed above, to locate an authorized PASC Servicenter. Carry-in or mail-in service in Puerto Rico can be obtained during the warranty period by calling the Panasonic Sales Company telephone number listed in the Servicenter Directory.

This warranty is extended only to the original purchaser. A purchase receipt or other proof of the date of the original purchase is required before warranty service is rendered.

This warranty only covers failures due to defects in materials and workmanship, which occur during normal use and does not cover normal maintenance, including, but not limited to, video and audio head cleaning. The warranty does not cover damage which occurs in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, modification, faulty installation, set-up adjustments, improper antenna, inadequate signal pickup, maladjustment of consumer controls, improper operation, power line surge, improper voltage supply, lightning damage, commercial use such as hotel, office, restaurant, or other business or rental use of the product, or service by anyone other than a PASC Factory Servicenter or a PASC authorized Servicenter, or damage that is attributable to acts of God.

### LIMITS AND EXCLUSIONS

There are no express warranties except as listed above.

THE WARRANTOR SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGE TO RECORDING MEDIA) RESULTING FROM THE USE OF THIS PRODUCTS, OR ARISING OUT OF ANY BREACH OF THE WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which vary, from state to state. If a problem with this product develops during or after the warranty period, you may contact your dealer or Servicenter. If the problem is not handled to your satisfaction, then write to the Consumer Affairs Department at the Panasonic Consumer Electronics Company address above.

SERVICE CALLS WHICH DO NOT INVOLVE DEFECTIVE MATERIALS OR WORKMANSHIP AS DETERMINED BY THE WARRANTOR, IN ITS SOLE DISCRETION, ARE NOT COVERED. COSTS OF SUCH SERVICE CALLS ARE THE RESPONSIBILITY OF THE PURCHASER.

warvid 02/12/2001



## Connexiones/Configurcion Inicial

Conecte por favor todas las conexiones del cable o de la antena antes de turing potencia.

### Conectando

#### Para Ant./Cable

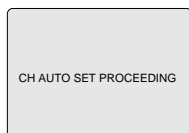
Conecte Ant./Cable a la entrada de antena de la TV (VHF/UHF).

#### Para Sistema Digital de Satelite (DSS)/ Convertidor de cable

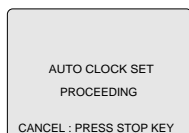
Conecte la salida del convertidor de cable la "VHF/UHF" con el RF cable.

## Realizando Configuracion Inicial

- 1** Presione COMBO para modo del combo. Tape el cable electrico de la unidad en el enchufe de pared de la CA. POWER de la prensa en el telecontrol o la unidad. La unidad se adelanta y comienzo auto del canal y del reloj.

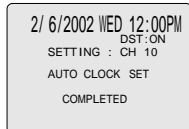


Si usa convertidor de cable, enciendala y seleccione el Servicio Publico de Canales de Television (PBS) en su horario de uso o tiempo de su zona. Si utiliza receptor DSS este debe de estar apagado.



CANCEL : PRESS STOP KEY

- 2** Selecciones se realizaran automaticamente cuando la configuracion termine, la pantalla siguiente aparecera.



Si "AUTO CLOCK SET IS INCOMPLETE" aparece en pantalla, coloque el tiempo usando el procedimiento manual (MANUAL CLOCK SET), vealo enseguida..

## Ajuste Manual del Reloj

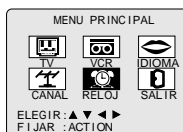
Si el ajuste automático del reloj no se ha completado, ajuste el reloj manualmente de la siguiente manera:

- 1) Presione la tecla ACTION en el control remoto para visualizar la pantalla del menú RELOJ.
- 2) Presione ▲▼ para seleccionar el mes y ► para ajustar. De la misma forma, seleccione y ajuste la fecha, año, hora y DST (Hora de Verano).
- 3) Presione dos veces la tecla ACTION para poner el RELOJ en marcha y salir.

## Ajustar de nuevo el reloj

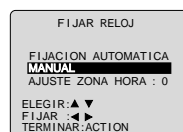
- 1** Presione ACTION para exhiba el menú.

**2**



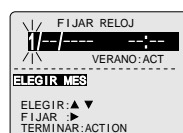
Presione ▲▼ for seleccionar "RELOJ". Presione ACTION.

**3**



Presione ▲▼ para seleccionar "MANUAL" y luego presione ►.

**4**



Presione ▲▼ y ◀▶ para seleccionar y ajustar la hora y la fecha.

**5**

Presione ACTION dos veces para que el reloj comience a funcionar y salir desde este modo.

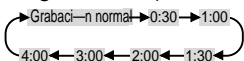


## Operaciones básicas para la reproducción

- 1 Inserte un casete.**
  - El videograbador combinado se enciende automáticamente.
- 2 Presione PLAY.**
  - La reproducción comienza automáticamente si el casete no tiene la lengüeta para prevención de grabación.
- Para encontrar una escena en particular  
Búsqueda hacia adelante => Presione FF  
Búsqueda hacia atrás => Presione REV
- Para ver una imagen fija (congelada) => Presione PAUSE/SLOW
- Para ver en cámara lenta => Mantenga pulsado el botón PAUSE/SLOW en el modo de imagen fija
- Para ver imágenes cuadro a cuadro => Presione PAUSE/SLOW en el modo de imagen fija
- Para parar => Presione STOP
- Para rebobinar la cinta => Presione REW
- Para hacer avanzar la cinta rápidamente => Presione FF
- Para expulsar la cinta => Presione EJECT en el control remoto o STOP/EJECT en el videograbador combinado

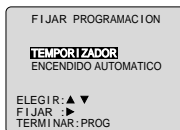
## Operaciones básicas para la grabación

- 1 Inserte un casete con la lengüeta para prevención de grabado.**
  - El videograbador combinado se enciende automáticamente.
- 2 Seleccione el canal.**  
Presione CH ▲▼ o las teclas numéricas correspondiente.
- 3 Seleccione la velocidad de grabación.**  
Presione SPEED.  
SP = reproducción normal  
LP = reproducción larga  
SLP = reproducción super larga
  - La velocidad seleccionada debe aparecer en la pantalla.
- 4 Comience la grabación.**  
Presione REC.
  - Para editar partes no deseadas de una grabación, presione PAUSE/SLOW para hacer una pausa durante la grabación.
  - No podrá ver otro canal durante la grabación.
  - Para parar => Presione STOP.
  - **El videograbador combinado deja de grabar a una hora prefijada.**  
(Grabación de un toque)  
Presione REC repetidamente para ajustar la hora de grabación (30 min - 4 horas.)

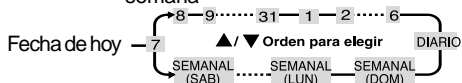


## Grabación con temporizador

- 1 Exhiba FIJAR PROGRAMACION.**  
Presione PROG.
- 2 Exhiba TEMPORIZADOR.**
  - 1) Presione ▲▼ para seleccionar.
  - 2) Presione ► para exhibir.
- Si ya existe un programa en la memoria, presione ▲▼ y ► para seleccionar un número de programa sin usar.
- 3 Ajuste la fecha de grabación.**
  - 1) Presione ▲▼ para seleccionar.
  - 2) Presione ► o ◀ para ajustar.

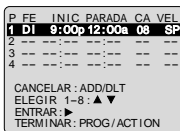


- 1 - 31 = Grabación única
- DIARIO = a la misma hora de lunes a viernes
- SEMANAL = a la misma hora una vez a la semana



Repita el paso 3 para ajustar:  
hora de comienzo, hora de parada, canal (o LINEA para una fuente exterior), velocidad (SP, LP, SLP)

- 4 Termine el programa.**  
Presione PROG (o ACTION.)



**Para introducir más programas.**  
presione ▲▼ y ► para seleccionar y ajustar el número de programa en blanco, y luego repita los pasos 3 y 4.

- 5 Salga de este modo.**  
Presione PROG dos veces (o ACTION.)
  - Si está usando un decodificador de TV cable, asegúrese que se encuentra en el canal deseado y que la alimentación queda conectada para grabar con temporizador.
  - El indicador PROG TIMER se enciende en el videograbador combinado.



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LSQT0582A

**Panasonic Consumer Electronics Company,**  
**Division of Matsushita Electric Corporation of America**  
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**Division of Matsushita Electric of Puerto Rico, Inc.**  
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 LSQT0582A  
 M0901-0



### 1. Important safety notice

Components identified by the sign  have special characteristics important for safety. When replacing any of these components. Use only the specified parts.

### 2. Do not use the part number shown on this drawing for ordering.

The correct part number and part value is shown in the parts list, and may be slightly different or amended since this drawing was prepared.

### 3. Use only original replacement parts:

To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

### 4. Parts different in shape or size may be used.

However, only interchangeable parts will be supplied as service replacement parts.

### 5. Test point information

● : Test point with a jumper wire across a hole in P.C.B.

○ : Test point with no test pin.

□→ : Test point with a component lead on the foil side.

## Schematic Diagram Notes

### 1. Indication for Zener Voltage of Zener Diodes

The Zener Voltage of Zener Diodes are indicated as such on Schematic Diagrams.

Example:

(6.2V).....Zener Voltage

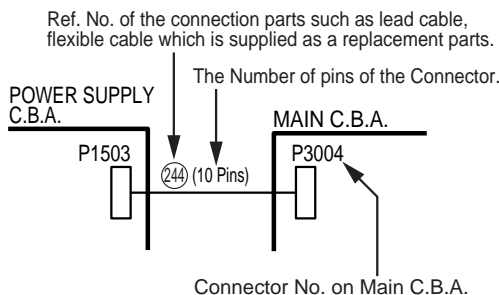
### 2. How to identify Connectors

Each connector is labeled with a Connector No. and Pin No. Indicating what it is connected to, in other words, its counter part.

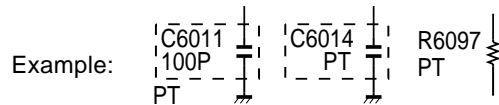
Use the interconnection schematic diagram to find the connection between associated connectors.

Example:

The connections between C.B.A.s are shown below.



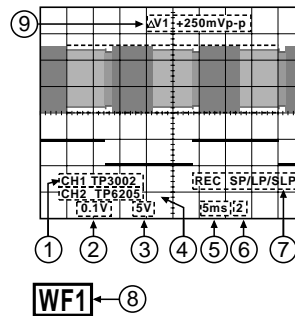
3. Parts marked "PT" are not used in any models included in this service model.



4. Jumper wires are used for WA10, WA5 etc and these are not supplied as replacement parts.

## Signal Waveform Note

How to read Signal Waveform



- ① Connecting Point
- ② Volts/Div
- ③ Volts/Div
- ④ Connecting Point
- ⑤ Time/Div
- ⑥ Trigger Channel of the scope (1:CH1,2:CH2)
- ⑦ Operation Mode of VCR
- ⑧ Waveform Point on Schematic
- ⑨ ΔV1:Peak to Peak

## Circuit Board Layout Note

Circuit Board Layout shows components installed for various models.

For proper parts content for the model you are servicing, please refer to the schematic diagram and parts list.

NOTE:

Circuit Board Layout includes components which are not used.

## Model No. Identification Mark

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

Note : Refer to item 3 of Schematic Diagram Notes for mark "PT".



NOTE: FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS	
MODEL	MARK

PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

TERMINAL VOLTAGE	0V ~ 0.6V	0.7V ~ 1.9V	2.0V ~ 3.1V
KEY DATA1 (PIN 89)	CH DOWN	VOLUME DOWN	FF/CUE
KEY DATA2 (PIN 88)	CH UP	VOLUME UP	TV/FM
KEY DATA3 (PIN 87)	PLAY /REPEAT	REW /REVIEW	REC/TIME
KEY DATA4 (PIN 86)	STOP/EJECT	----	POWER





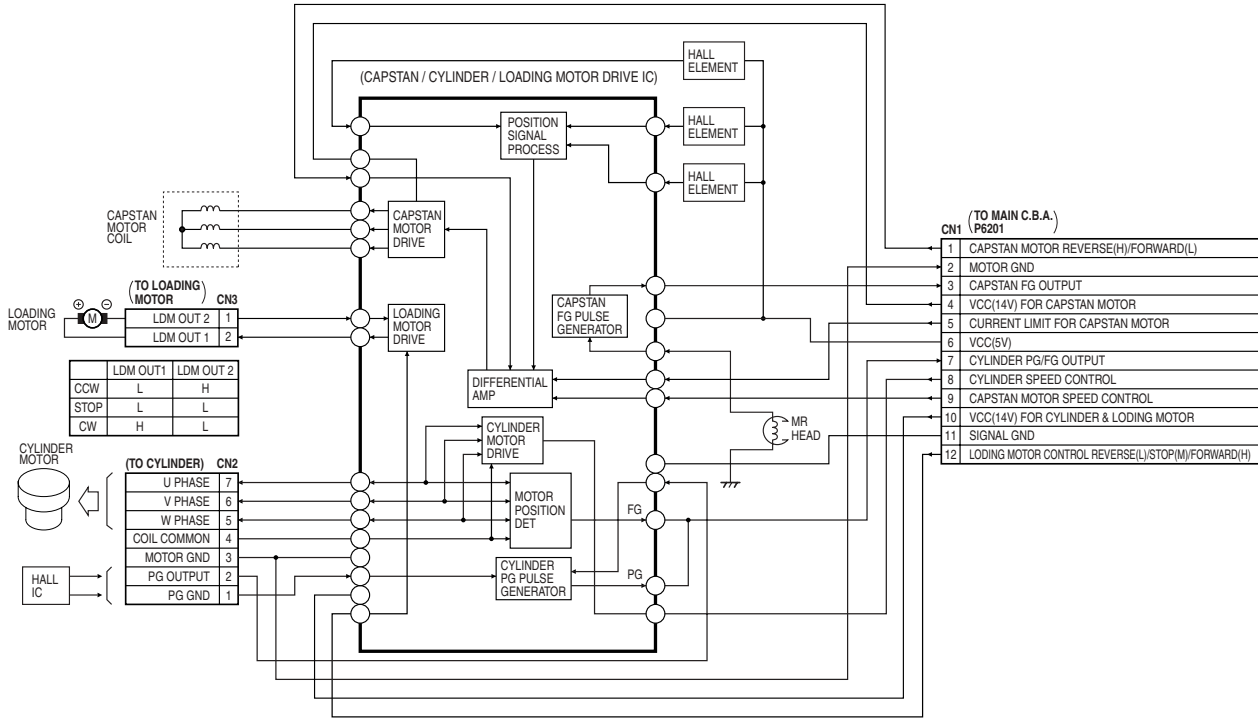
I/O CHART OF IC6001

Pin No.	I/O	Signal Name	Description
1	I	P_DOWN_L	POWER DOWN(L)
2	O	CRSS_L	CUE/REV/SLOW/STILL(L)
3	I	T-REEL	TAKE-UP REEL PULSE
4	I	S-REEL	SUPPLY REEL PULSE
5	I	IR-DATA	IR-DATA
6	O	DEFEAT_H	(Not used)
7	O	A_MUTE_H	AUDIO MUTE(H)
8	I	IIC_SVC_L	I2C SERVICE MODE(L)
9	-	NC	(Not used)
10	O	TUNER_L	(Not used)
11	O	SAP/MAIN	(Not used)
12	O	MONO/MTS	(Not used)
13	O	V_MUTE_H	(Not used)
14	O	SCK	SERIAL CLOCK
15	I	SBIO	(Not used)
16	O	DATA_OUT	SERIAL DATA OUTPUT
17	I/O	IIC_DATA	I2C SERIAL DATA
18	O	IIC_CLK	I2C SERIAL CLOCK
19	I/O	BEEPER	BEEPER
20	-	NC	(Not used)
21	O	CAP_F/R	CAPSTAN MOTOR REVERSE(H)/FORWARD(L)
22	O	BEEP_ON_H	BEEPER ON(H)
23	O	HSW	HEAD SW
24	O	VLP	V-LOCK PULSE
25	I	RST	RESET(L)
26	O	3.58MHz/L	3.58MHz
27	-	NC	(Not used)
28	O	POWER_ON_L	POWER ON(L)
29	O	V_D_REC_H	VIDEO DELAY REC(H)
30	I	LINE_SD_L	TV SIGNAL(L)
31	-	NC	(Not used)
32	O	A_VOLUME	AUDIO VOLUME
33	O	CAP	CAP ERROR
34	O	CYL	CYL ERROR
35	O	SP_MUTE_L	AUDIO AMP MUTE(L)
36	I	DVDD	VDD
37	O	OSC-OUT	OSC 2
38	I	OSC-IN	OSC 1
39	-	DVSS	GND
40	O	TNR_CE_H	TUNER CHIP ENABLE(H)
41	I	TNR_LOCK_L	TUNER LOCK SIGNAL(L)
42	I	SXI	SXI
43	I/O	FM_RAD_F_MONO_H/NOR_I	(Not used)
44	O	TV_P_ON_H	TV POWER ON(H)
45	I	V_SYNC	Y-SYNC
46	I	H_SYNC	H-SYNC
47	-	NC	(Not used)
48	-	VSS2_OSD	GND
49	I	CV_IN1	VIDEO
50	I	CV_IN2	VIDEO

Pin No.	I/O	Signal Name	Description
51	I	VDD2_OSD	VDD
52	I	AFC_C	AFC
53	O	AFC_LPF	AFC
54	O	FM_RAD_H	FM RADIO(H)
55	O	FSC_LPF	FSC
56	I	FM_RAD_STE_L	FM STEREO(L)
57	I	FM_RAD_SD_L	FM SIGNAL(L)
58	O	PLAY_L	PB(L)
59	O	BLK_H	BLANKING PULSE(H)
60	O	LOAD-F/S/R	LOADING MOTOR CONTROL REVERSE(L)/STOP(M)/FORWARD(H)
61	O	R	OSD RED
62	O	G	OSD GREEN
63	O	B	OSD BLUE
64	I	S_TAB_ON_L	SAFETY TAB ON(L)
65	I	Y_PFG	CYL PG/FG
66	I	TNR_SD_L	TUNER SIGNAL(L)
67	O	FGF	CAP FG
68	I	AFG	CAP FG
69	O	VRO	V-REF 1
70	I	VRI	V-REF 2
71	-	AVSS	GND
72	I	CTLA	CTL AMP
73	I	AVDD	VDD
74	I/O	RCTLP	CTL PULSE(+)
75	-	RCTLN	CTL PULSE(-)
76	O	CTL_OUT	PB CONTROL PULSE
77	-	NC	(Not used)
78	I	DTS_AFC	AFC
79	I	OVER_CUR_H	OVER CURRENT(H)
80	I	T-PHOTO/DEBUG_L	TAKE-UP PHOTO TR(L)/SERVICE(L)
81	I	S-PHOTO_L	SUPPLY PHOTO TR(L)
82	I	AT_ENV	ENV-VOLTAGE
83	I	2H/4H/STE/HF/2LC_OPT	SWITCHING TERMINAL OPTION (2HEAD/4HEAD/STEREO)
84	O	RAD/UNIV/aux_OPT	SWITCHING TERMINAL OPTION (FM RADIO/UNIVERSAL)
85	-	NC	(Not used)
86	I	KEY_IN_3	KEY DATA 3
87	I	KEY_IN_2	KEY DATA 2
88	I	KEY_IN_1	KEY DATA 1
89	I	KEY_IN_0	KEY DATA 0
90	O	PR_T_LED	PROGRAM TIMER LED ON(L)
91	O	ON_T_LED	ON TIMER LED ON(L)
92	O	REC_LED	REC LED ON(L)
93	I	SAP_IN_L	(Not used)
94	I	MTS_IN_L	(Not used)
95	I	POS.3	MODE SW POSITION C
96	I	POS.2	MODE SW POSITION B
97	I	POS.1	MODE SW POSITION A
98	O	ROT_SW	ROTARY SW
99	O	HA_SW	HEAD AMP SW
100	I	D_ENV	ENVELOPE DET

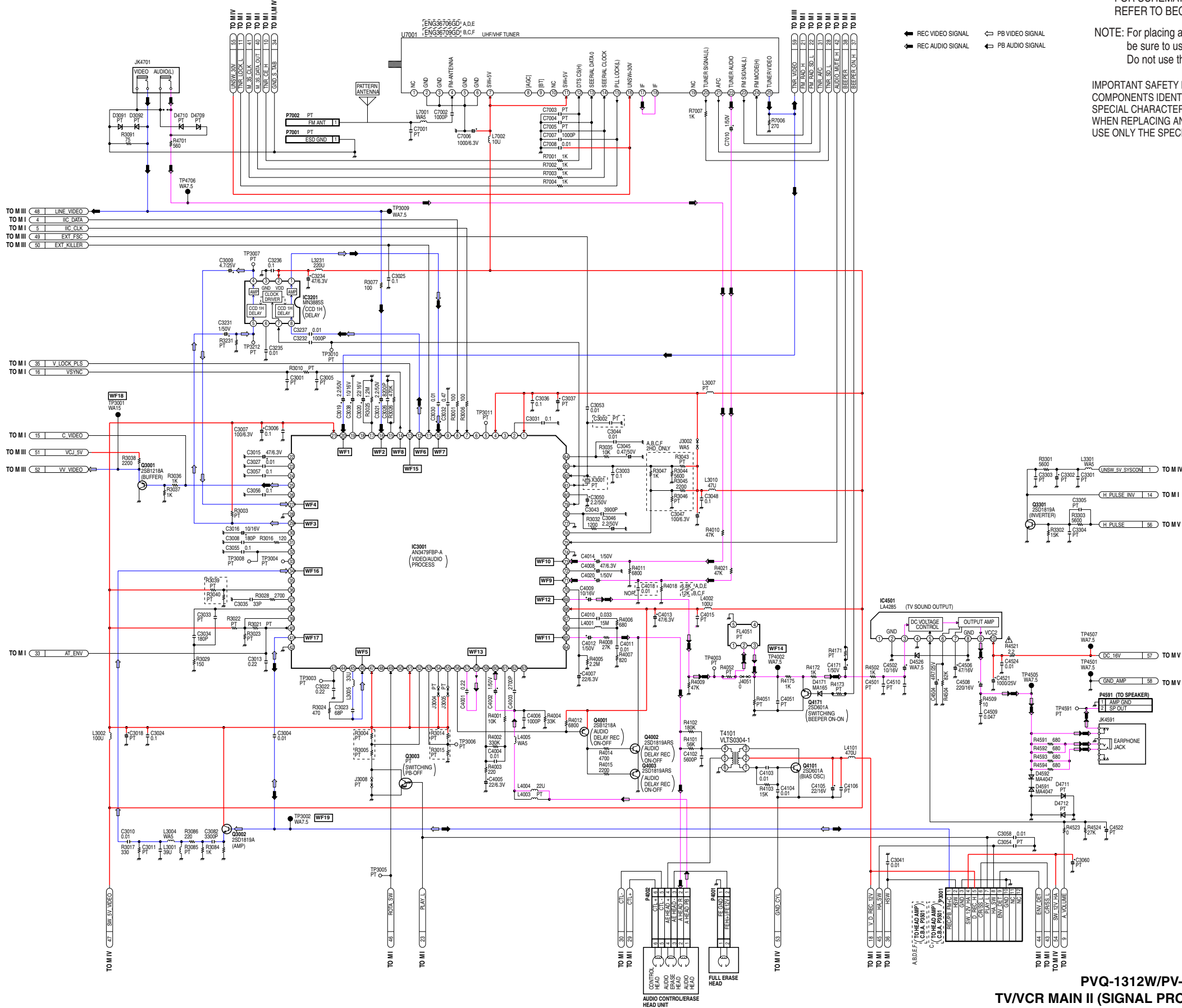
CAPSTAN MOTOR ASS'Y

NOTE:  
CAPSTAN MOTOR ASS'Y (REF. NO. 46) IS SUPPLIED AS A UNIT ONLY.  
HOWEVER, THE FLAT FLEXIBLE CABLE (REF. NO. 48) IS AVAILABLE SEPARATELY AS A REPLACEMENT PART.





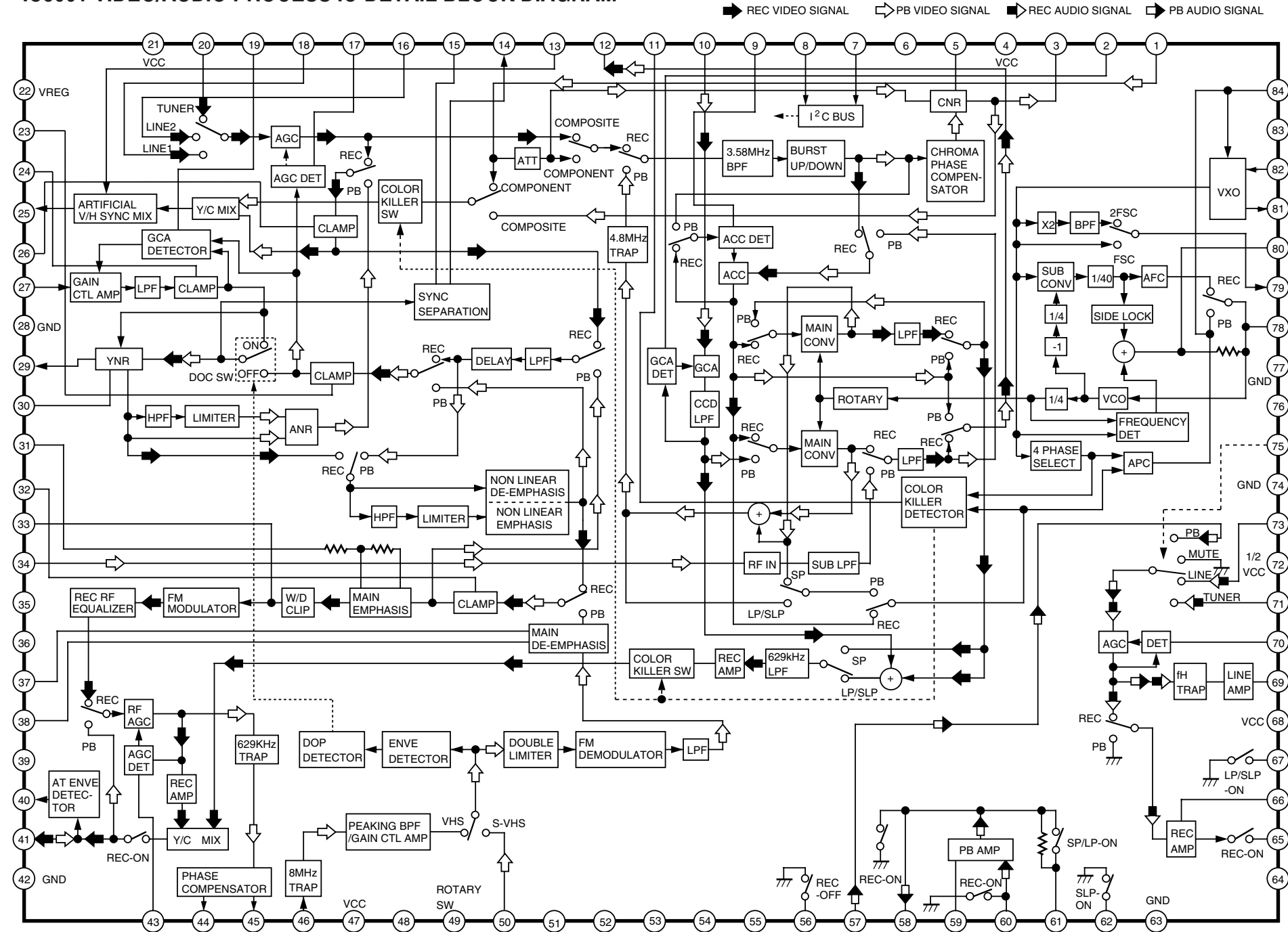
TV/VCR MAIN II (SIGNAL PROCESS/AUDIO/DEMODULATOR) SCHEMATIC DIAGRAM (A, B, C, D, E, F)



LINK TO SIGNAL WAVEFORM



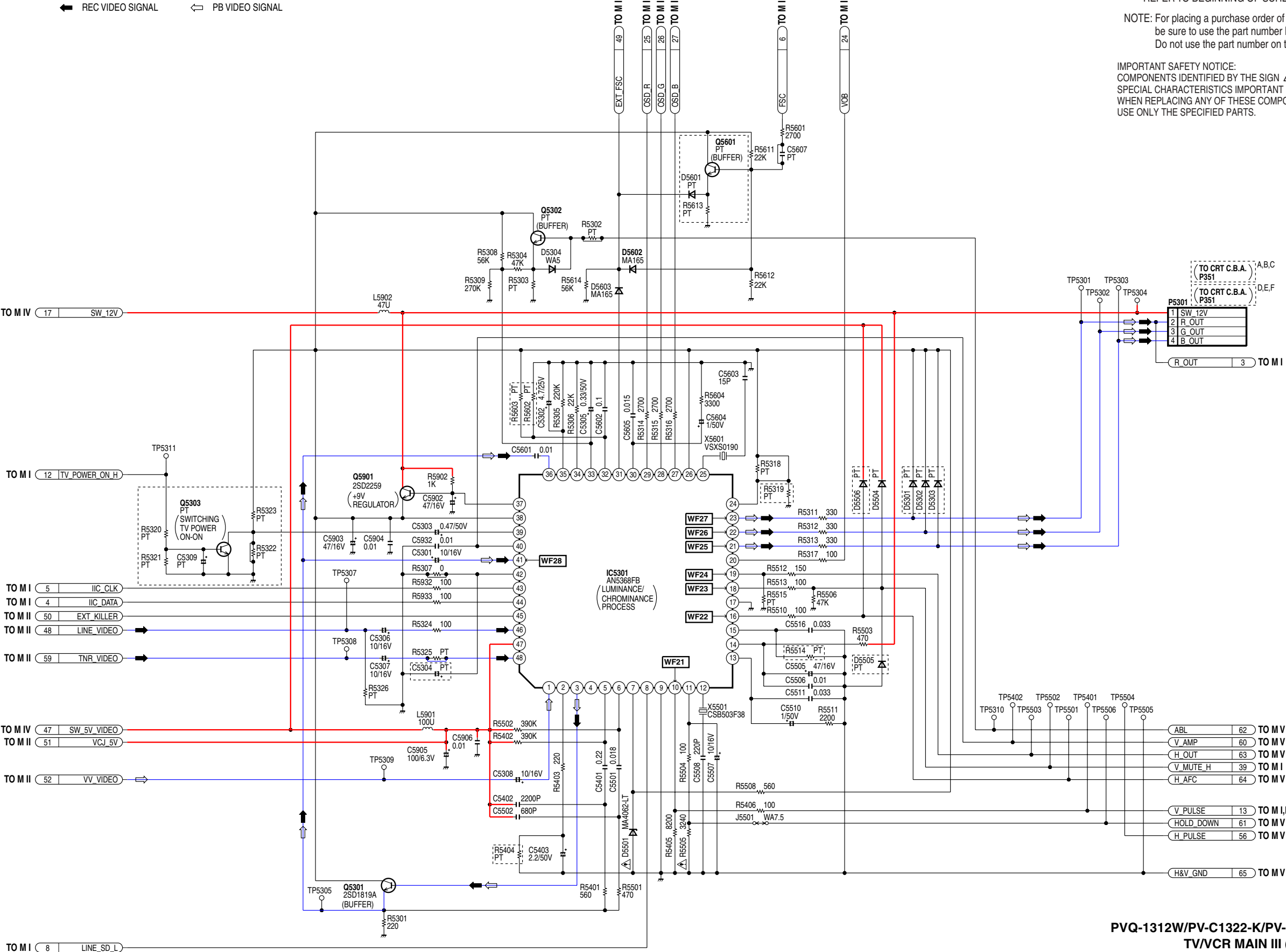
## IC3001 VIDEO/AUDIO PROCESS IC-DETAIL BLOCK DIAGRAM






TV/VCR MAIN III (TV Y/C PROCESS) SCHEMATIC DIAGRAM (A, B, C, D, E, F)

REC VIDEO SIGNAL      PB VIDEO SIGNAL

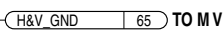
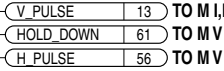
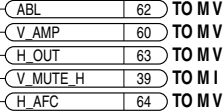
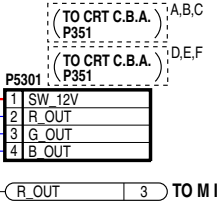


NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.

IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

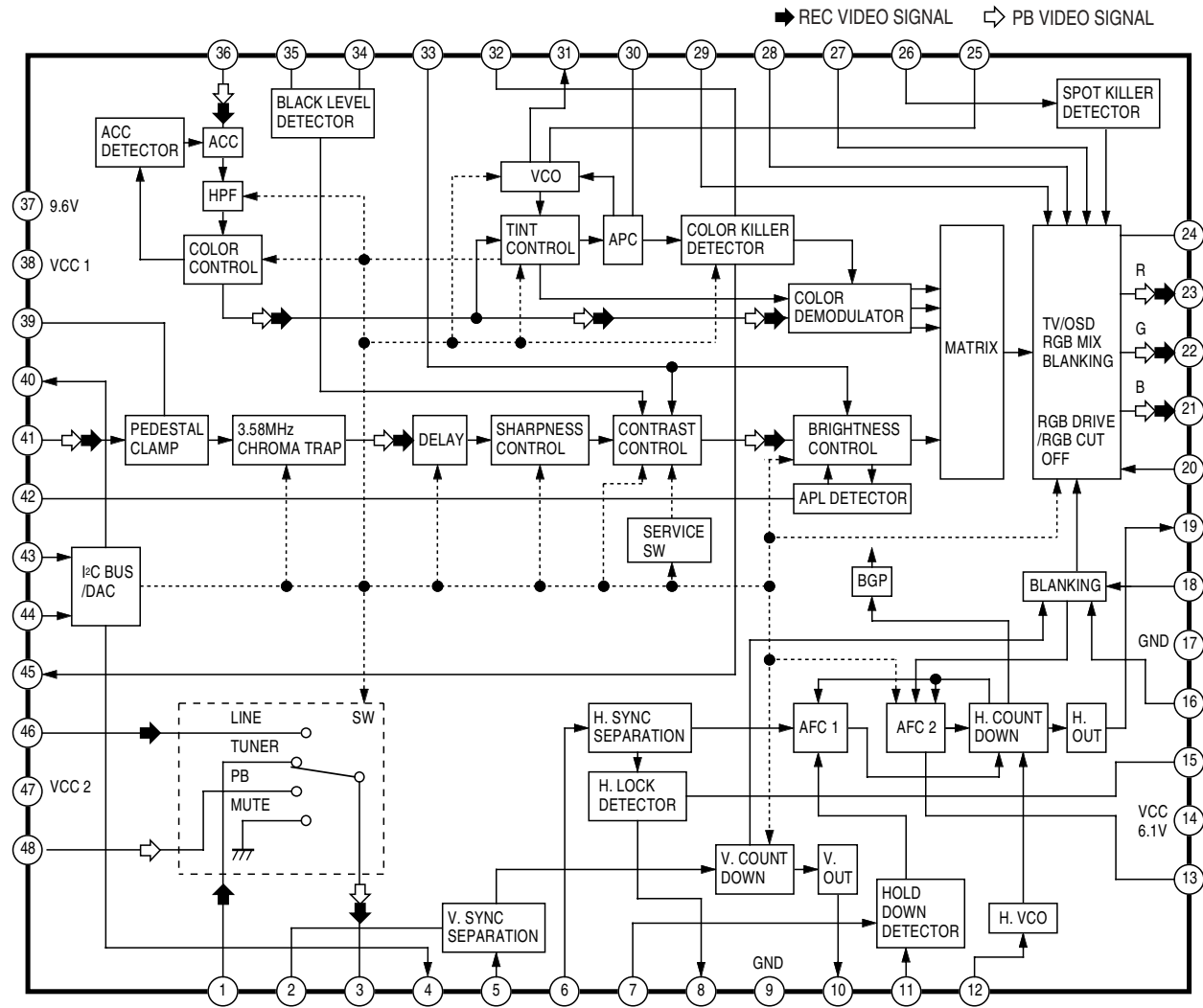
COMPARISON CHART OF MODELS & MARKS	
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT



LINK TO SIGNAL WAVEFORM



IC5301 LUMINANCE/CHROMINANCE PROCESS  
IC-DETAIL BLOCK DIAGRAM






## TV/VCR MAIN IV (POWER SUPPLY) SCHEMATIC DIAGRAM (A, B, C, D, E, F)

**CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,  
REPLACE ONLY WITH THE SAME TYPE 4A 125/250V FUSE.**  
**ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES  
D'INCENDIE N'UTILISER QUE DES FUSIBLES DE MÊME  
TYPE 4A 125/250V**

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,  
REPLACE ONLY WITH THE SAME TYPE 1.6A 125/250V FUSE.  
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES  
D'INCENDIE N'UTILISER QUE DES FUSIBLES DE MÊME  
TYPE 1.6A 125/250V

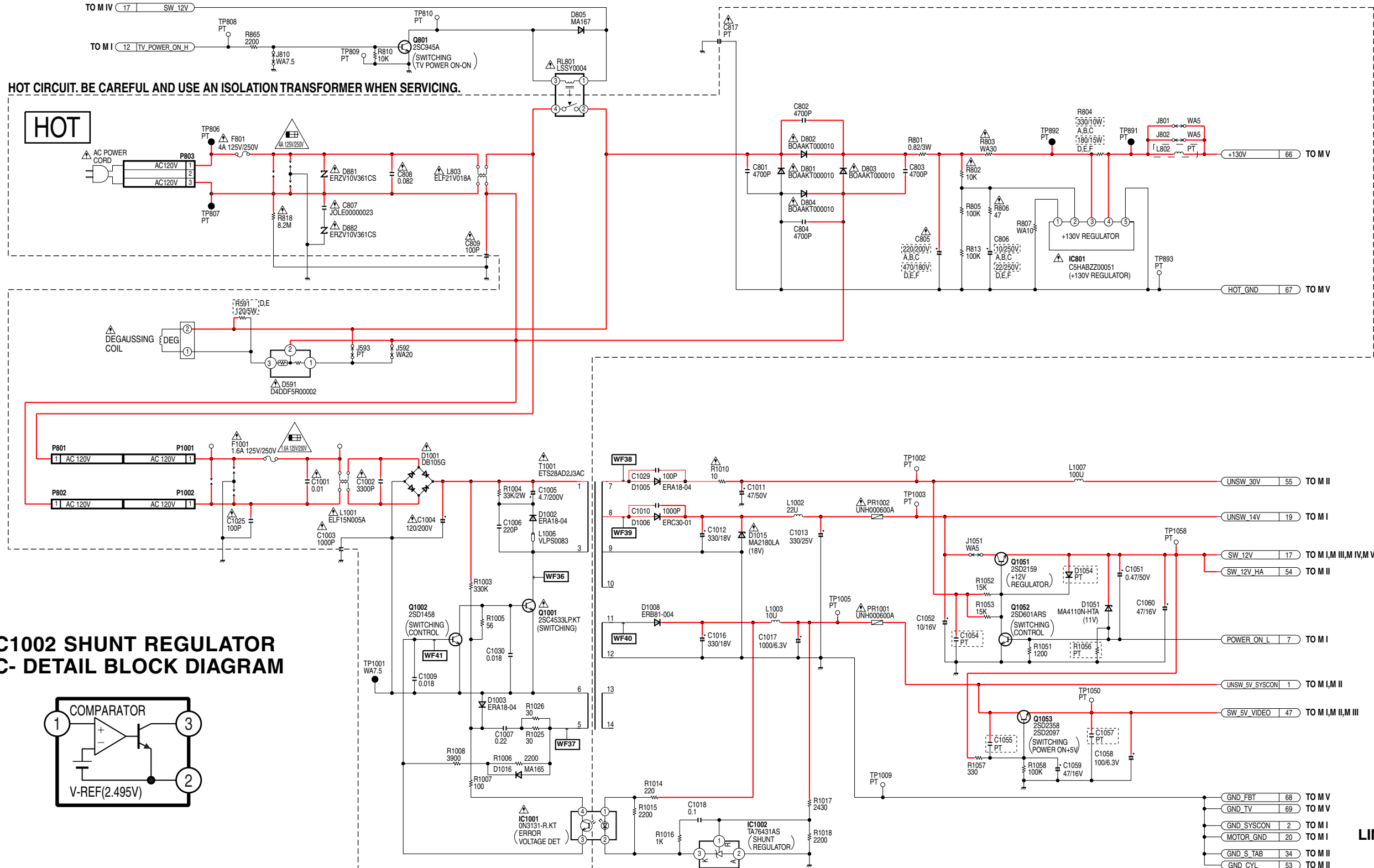
**IMPORTANT SAFETY NOTICE:**  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.

## COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT



### LINK TO SIGNAL WAVEFORM

LSJB2012

**PVQ-1312W/PV-C1322-K/PV-C1352W-K/PVQ-2012/VV-2002/PV-C2022-K  
TV/VCR MAIN IV (POWER SUPPLY) SCHEMATIC DIAGRAM**



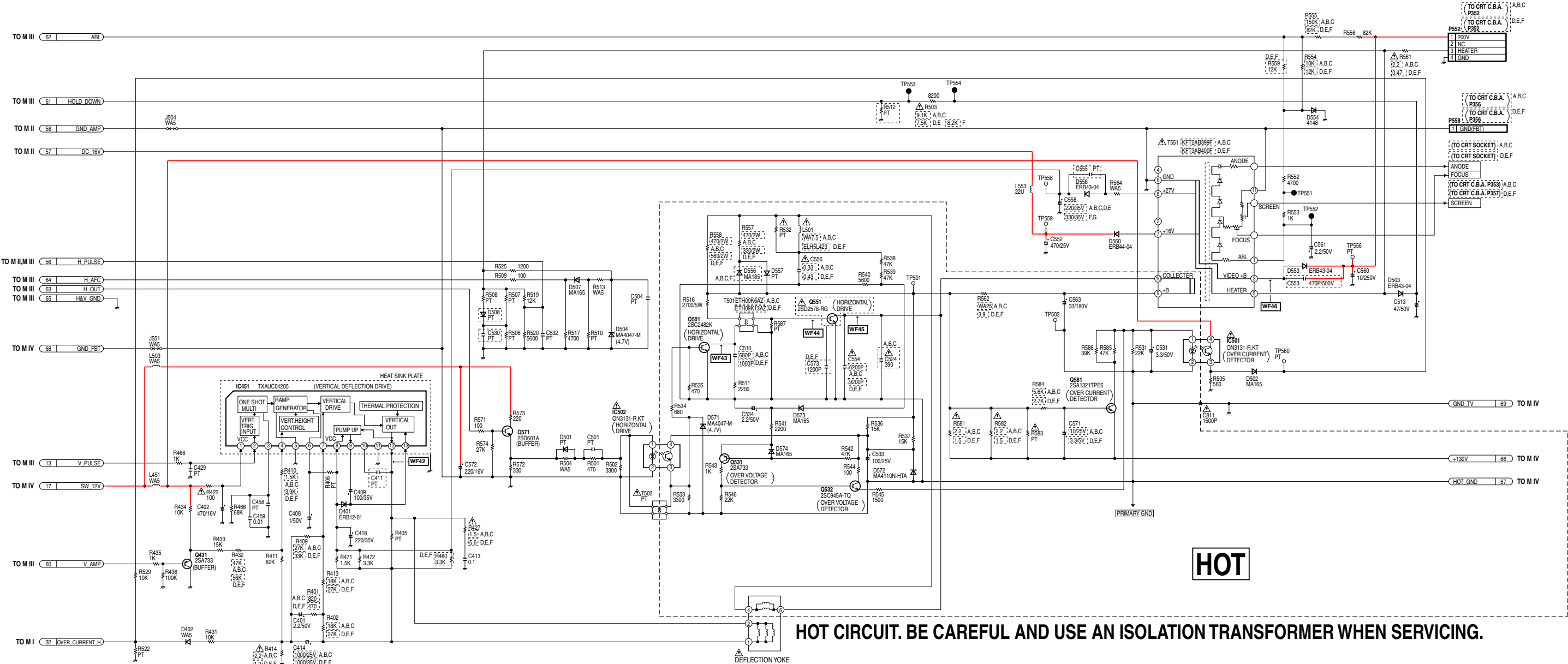
TV/VCR MAIN V (TV) SCHEMATIC DIAGRAM (A, B, C, D, E, F)

NOTE: FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

IMPORTANT SAFETY NOTICE: COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

COMPARISON CHART OF MODELS & MARKS	
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT



HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.

LINK TO SIGNAL WAVEFORM

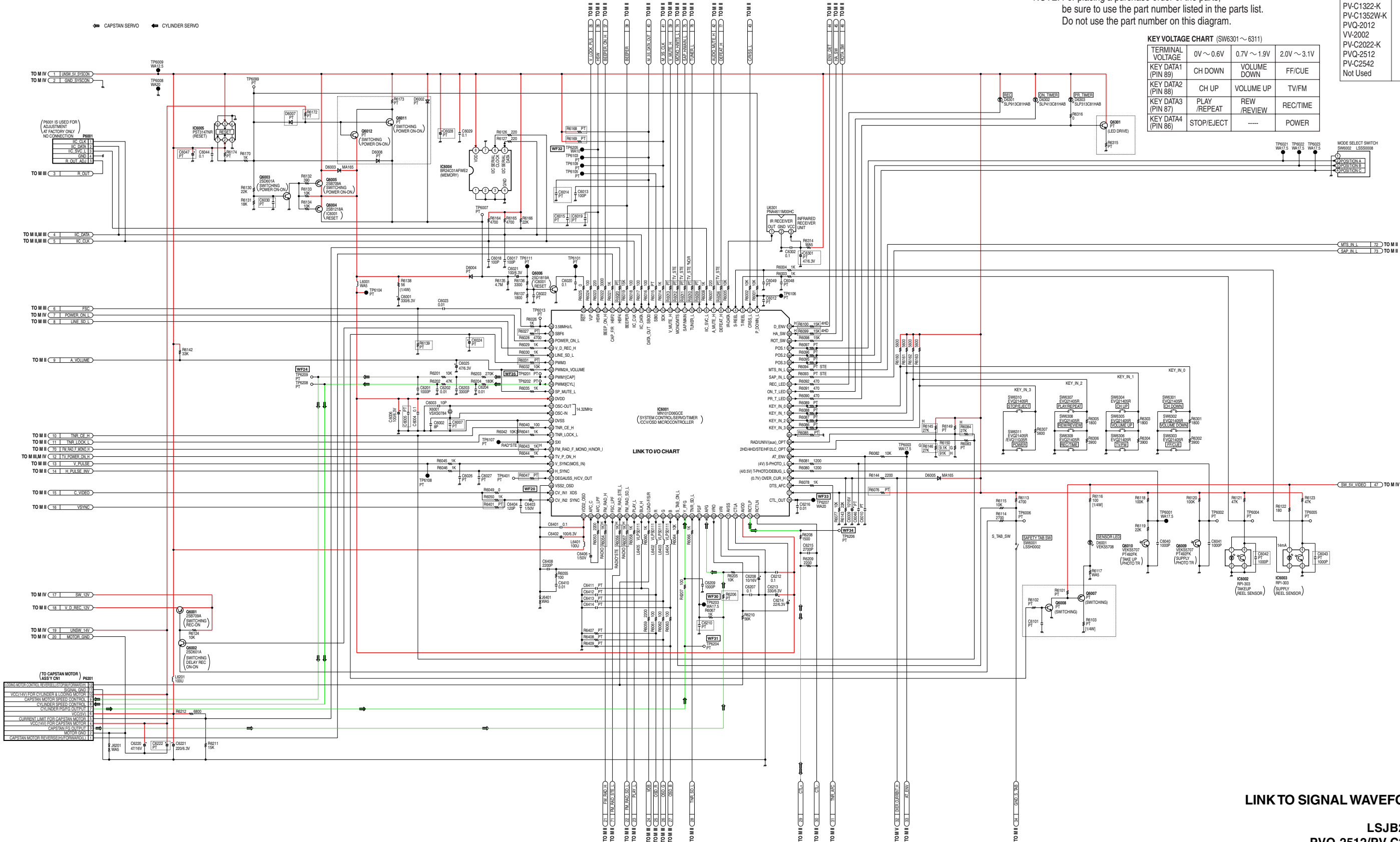


TV/VCR MAIN I (SYSTEM CONTROL/SERVO/CCV/OSD/OPERATION) SCHEMATIC DIAGRAM (G, H)

NOTE: FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

COMPARISON CHART OF MODELS & MARKS	
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT



LINK TO SIGNAL WAVEFORM



NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

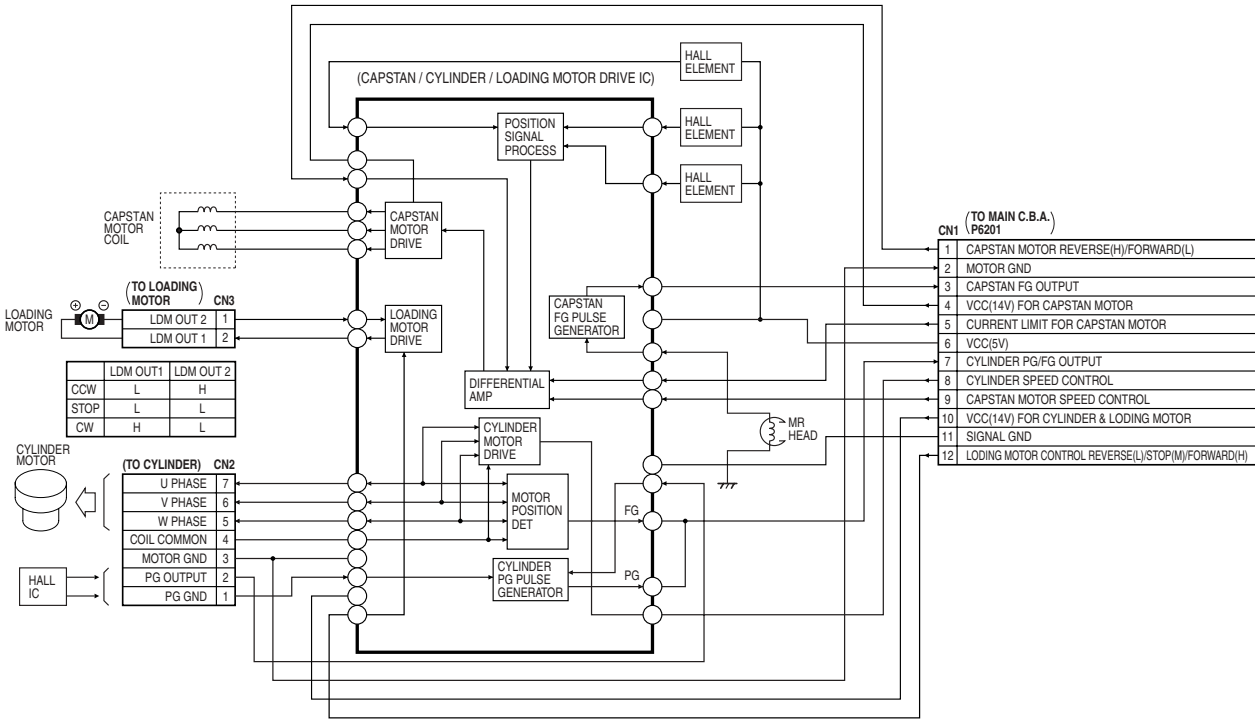
I/O CHART OF IC6001

Pin No.	I/O	Signal Name	Description
1	I	P_DOWN_L	POWER DOWN(L)
2	O	CRSS_L	CUE/REV/SLOW/STILL(L)
3	I	T-REEL	TAKE-UP REEL PULSE
4	I	S-REEL	SUPPLY REEL PULSE
5	I	IR-DATA	IR-DATA
6	O	DEFEAT_H	AUDIO DEFEAT(H)
7	O	A_MUTE_H	AUDIO MUTE(H)
8	I	IIC_SVC_L	I2C SERVICE MODE(L)
9	-	NC	(Not used)
10	O	TUNER_L	TV TUNER(H)/FM TUNER(L)
11	O	SAP/MAIN	SAP(H)/MAIN(L)
12	O	MONO/MTS	MONO(H)/STEREO(L)
13	O	V_MUTE_H	(Not used)
14	O	SCK	SERIAL CLOCK
15	I	SBIO	(Not used)
16	O	DATA_OUT	SERIAL DATA OUTPUT
17	I/O	IIC_DATA	I2C SERIAL DATA
18	O	IIC_CLK	I2C SERIAL CLOCK
19	I/O	BEEPER	BEEPER
20	-	NC	(Not used)
21	O	CAP_F/R	CAPSTAN MOTOR REVERSE(H)/FORWARD(L)
22	O	BEEP_ON_H	BEEPER ON(H)
23	O	HSW	HEAD SW
24	O	VLP	V-LOCK PULSE
25	I	RST	RESET(L)
26	O	3.58MHz/L	3.58MHz
27	-	NC	(Not used)
28	O	POWER_ON_L	POWER ON(L)
29	O	V_D_REC_H	VIDEO DELAY REC(H)
30	I	LINE_SD_L	TV SIGNAL(L)
31	-	NC	(Not used)
32	O	A_VOLUME	AUDIO VOLUME
33	O	CAP	CAP ERROR
34	O	CYL	CYL ERROR
35	O	SP_MUTE_L	AUDIO AMP MUTE(L)
36	I	DVDD	VDD
37	O	OSC-OUT	OSC 2
38	I	OSC-IN	OSC 1
39	-	DVSS	GND
40	O	TNR_CE_H	TUNER CHIP ENABLE(H)
41	I	TNR_LOCK_L	TUNER LOCK SIGNAL(L)
42	I	SXI	SXI
43	I/O	FM_RAD_F.MONO_H/NOR_I	FM MONO(H)
44	O	TV_P_ON_H	TV POWER ON(H)
45	I	V_SYNC	Y-SYNC
46	I	H_SYNC	H-SYNC
47	-	NC	(Not used)
48	-	VSS2_OSD	GND
49	I	CV_IN1	VIDEO
50	I	CV_IN2	VIDEO

Pin No.	I/O	Signal Name	Description
51	I	VDD2_OSD	VDD
52	I	AFC_C	AFC
53	O	AFC_LPF	AFC
54	O	FM_RAD_H	FM RADIO(H)
55	O	FSC_LPF	FSC
56	I	FM_RAD_STE_L	FM STEREO(L)
57	I	FM_RAD_SD_L	FM SIGNAL(L)
58	O	PLAY_L	PB(L)
59	O	BLK_H	BLANKING PULSE(H)
60	O	LOAD-F/S/R	LOADING MOTOR CONTROL REVERSE(L)/STOP(M)/FORWARD(H)
61	O	R	OSD RED
62	O	G	OSD GREEN
63	O	B	OSD BLUE
64	I	S_TAB_ON_L	SAFETY TAB ON(L)
65	I	Y_PFG	CYL PG/FG
66	I	TNR_SD_L	TUNER SIGNAL(L)
67	O	FGF	CAP FG
68	I	AFG	CAP FG
69	O	VRO	V-REF 1
70	I	VRI	V-REF 2
71	-	AVSS	GND
72	I	CTLA	CTL AMP
73	I	AVDD	VDD
74	I/O	RCTLP	CTL PULSE(+)
75	-	RCTLN	CTL PULSE(-)
76	O	CTL_OUT	PB CONTROL PULSE
77	-	NC	(Not used)
78	I	DTS_AFC	AFC
79	I	OVER_CUR_H	OVER CURRENT(H)
80	I	T-PHOTO/DEBUG_L	TAKE-UP PHOTO TR(L)/SERVICE(L)
81	I	S-PHOTO_L	SUPPLY PHOTO TR(L)
82	I	AT_ENV	ENV-VOLTAGE
83	I	2H/4H/STE/HF/2LC_OPT	SWITCHING TERMINAL OPTION (2HEAD/4HEAD/STEREO)
84	O	RAD/UNIV/aux_OPT	SWITCHING TERMINAL OPTION (FM RADIO/UNIVERSAL)
85	-	NC	(Not used)
86	I	KEY_IN_3	KEY DATA 3
87	I	KEY_IN_2	KEY DATA 2
88	I	KEY_IN_1	KEY DATA 1
89	I	KEY_IN_0	KEY DATA 0
90	O	PR_T_LED	PROGRAM TIMER LED ON(L)
91	O	ON_T_LED	ON TIMER LED ON(L)
92	O	REC_LED	REC LED ON(L)
93	I	SAP_IN_L	SAP SIGNAL(L)
94	I	MTS_IN_L	MTS SIGNAL(L)
95	I	POS.3	MODE SW POSITION C
96	I	POS.2	MODE SW POSITION B
97	I	POS.1	MODE SW POSITION A
98	O	ROT_SW	ROTARY SW
99	O	HA_SW	HEAD AMP SW
100	I	D_ENV	ENVELOPE DET

CAPSTAN MOTOR ASS'Y

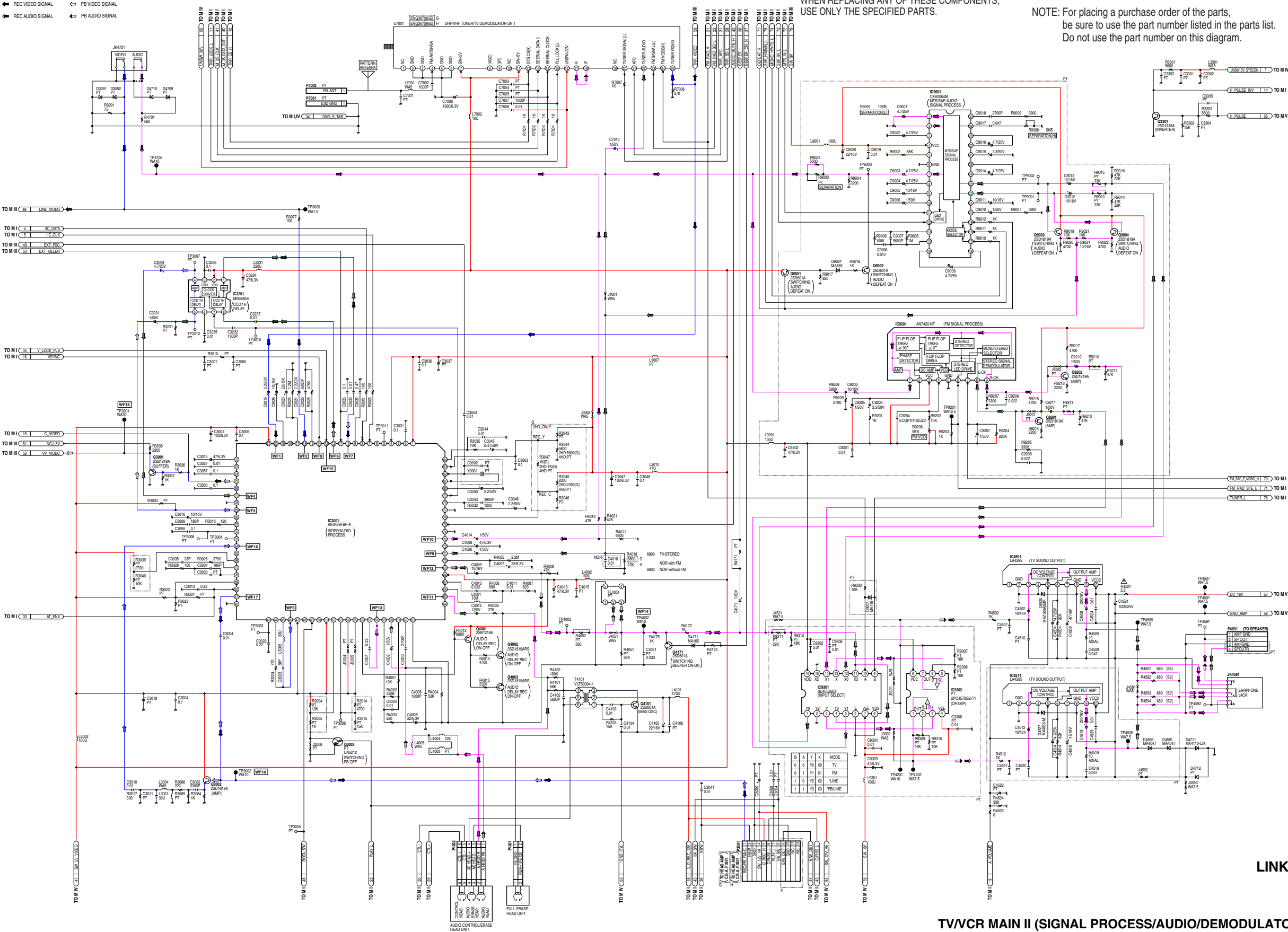
NOTE:  
CAPSTAN MOTOR ASS'Y (REF. NO. 46) IS SUPPLIED AS A UNIT ONLY.  
HOWEVER, THE FLAT FLEXIBLE CABLE (REF. NO. 48) IS AVAILABLE SEPARATELY AS A REPLACEMENT PART.






TV/VCR MAIN II (SIGNAL PROCESS/AUDIO/DEMODULATOR) SCHEMATIC DIAGRAM (G, H)

REC VIDEO SIGNAL    PB VIDEO SIGNAL  
REC AUDIO SIGNAL    PB AUDIO SIGNAL



IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.

COMPARISON CHART OF MODELS & MARKS	
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

LINK TO SIGNAL WAVEFORM

LSJB2013  
PVQ-2512/PV-C2542



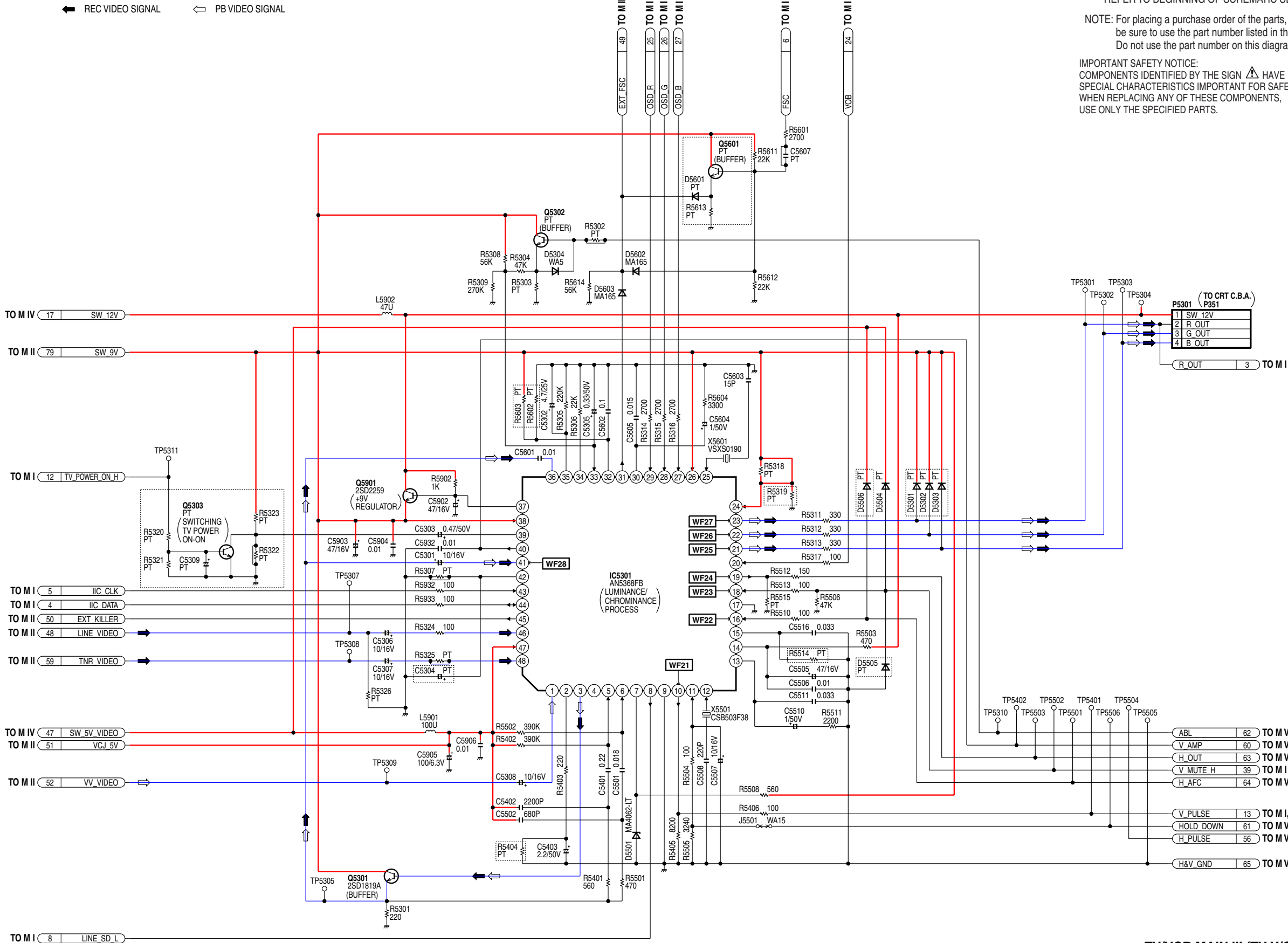
 REC VIDEO SIGNAL    
  PB VIDEO SIGNAL    
  REC AUDIO SIGNAL    
  PB AUDIO SIGNAL





TV/VCR MAIN III (TV Y/C PROCESS) SCHEMATIC DIAGRAM (G, H)

← REC VIDEO SIGNAL      ⇐ PB VIDEO SIGNAL



NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.

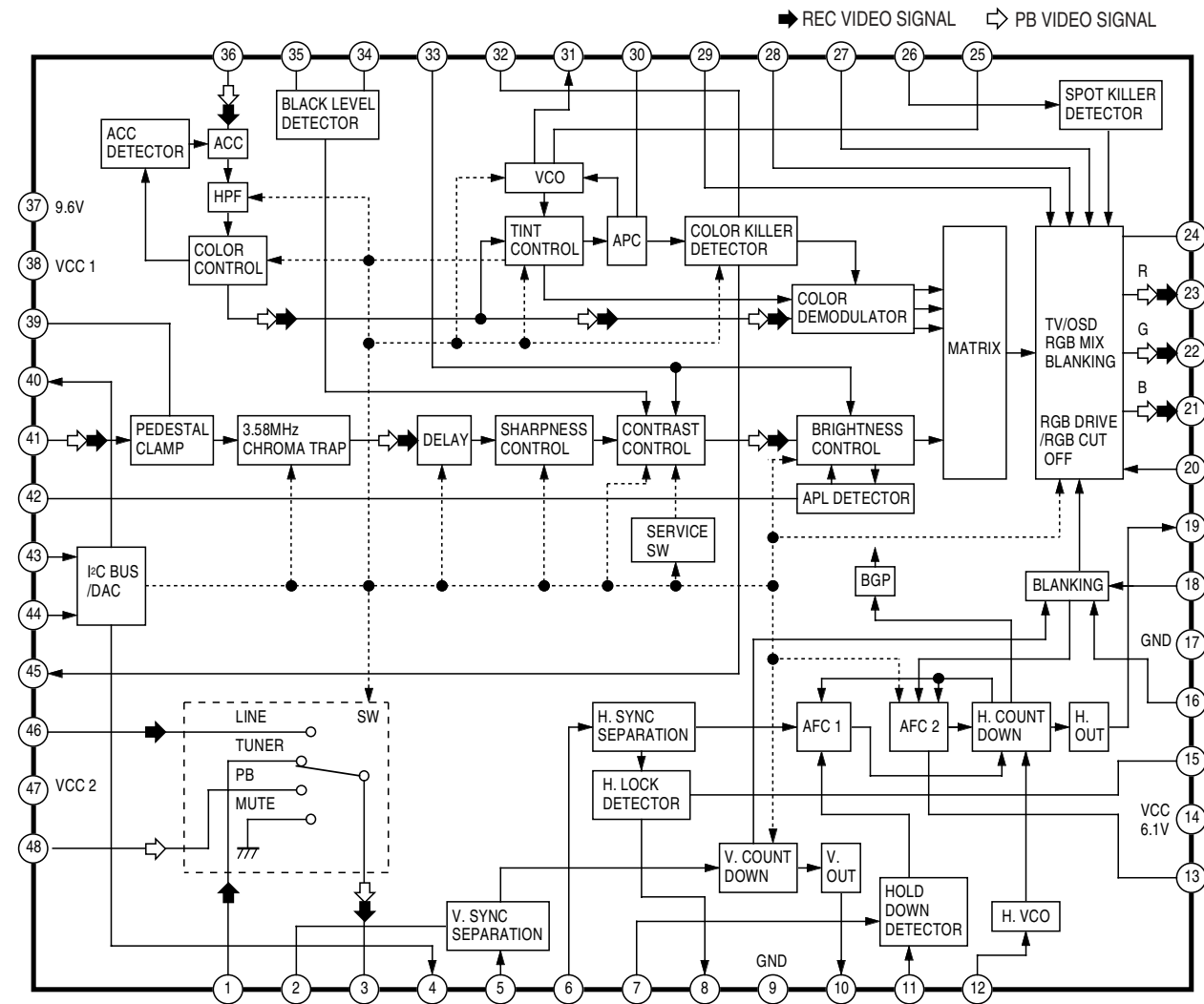
IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

COMPARISON CHART OF MODELS & MARKS	
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

LINK TO SIGNAL WAVEFORM



## IC5301 LUMINANCE/CHROMINANCE PROCESS IC-DETAIL BLOCK DIAGRAM





TV/VCR MAIN IV (POWER SUPPLY) SCHEMATIC DIAGRAM (G, H)

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE 4A 125/250V FUSE.  
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÊME TYPE 4A 125/250V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE 1.6A 125/250V FUSE.  
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'T INCENDIE N'I UTILISERQUE DES FUSIBLE DE MÊME TYPE 1.6A 125/250V

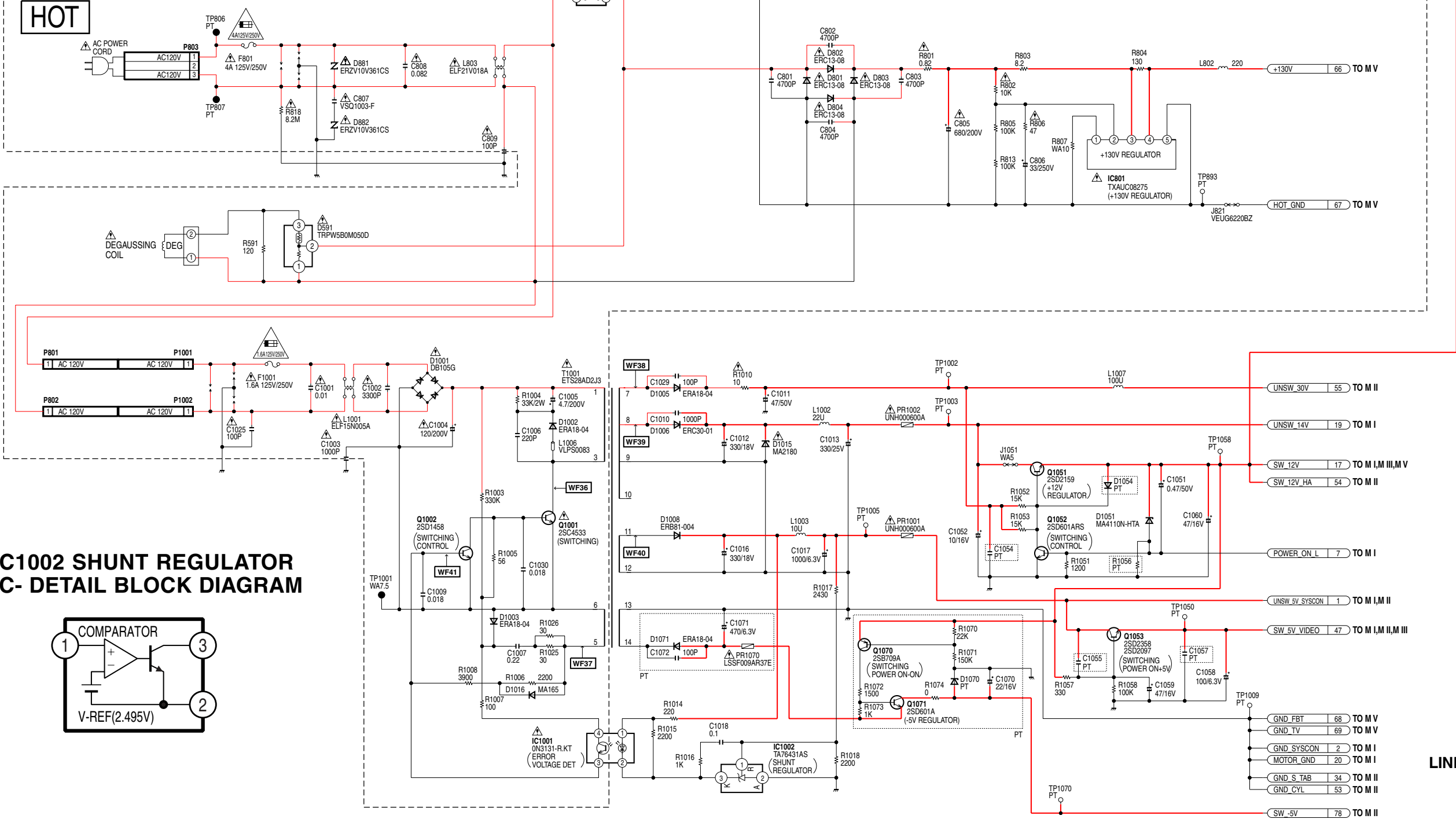
IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

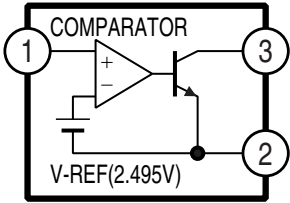
NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

COMPARISON CHART OF MODELS & MARKS	
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.




IC1002 SHUNT REGULATOR  
IC- DETAIL BLOCK DIAGRAM



LINK TO SIGNAL WAVEFORM



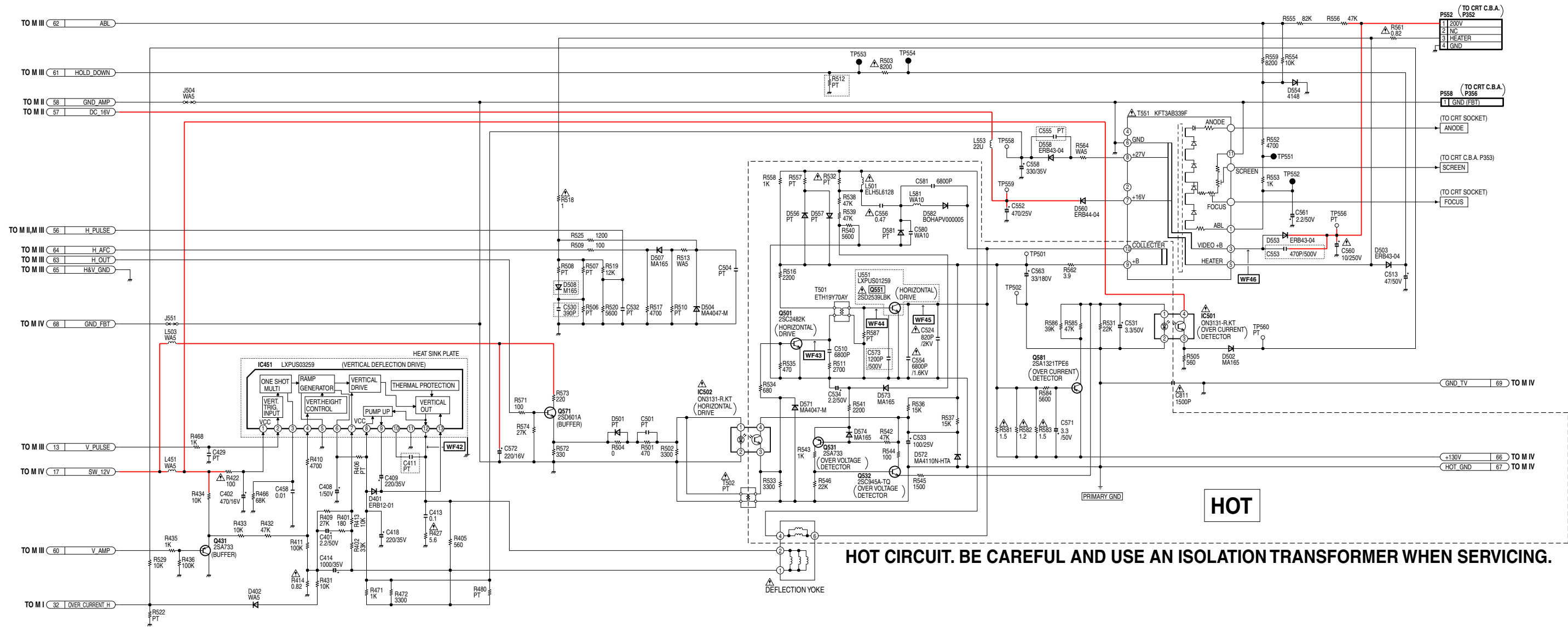
TV/VCR MAIN V (TV) SCHEMATIC DIAGRAM (G, H)

IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

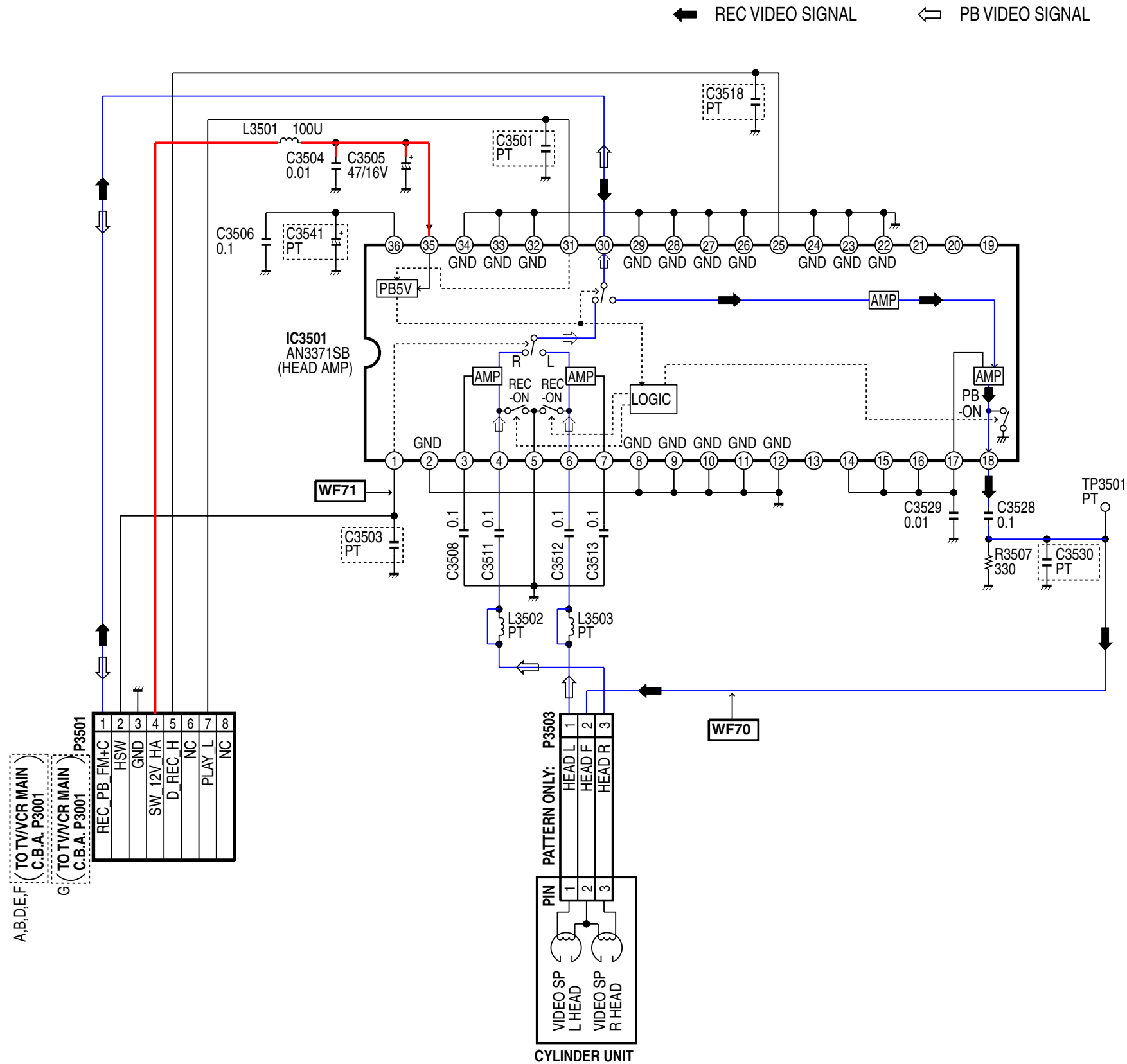
NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.

COMPARISON CHART OF MODELS & MARKS	
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT





## HEAD AMP SCHEMATIC DIAGRAM (A, B, D, E, F ,G)



NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

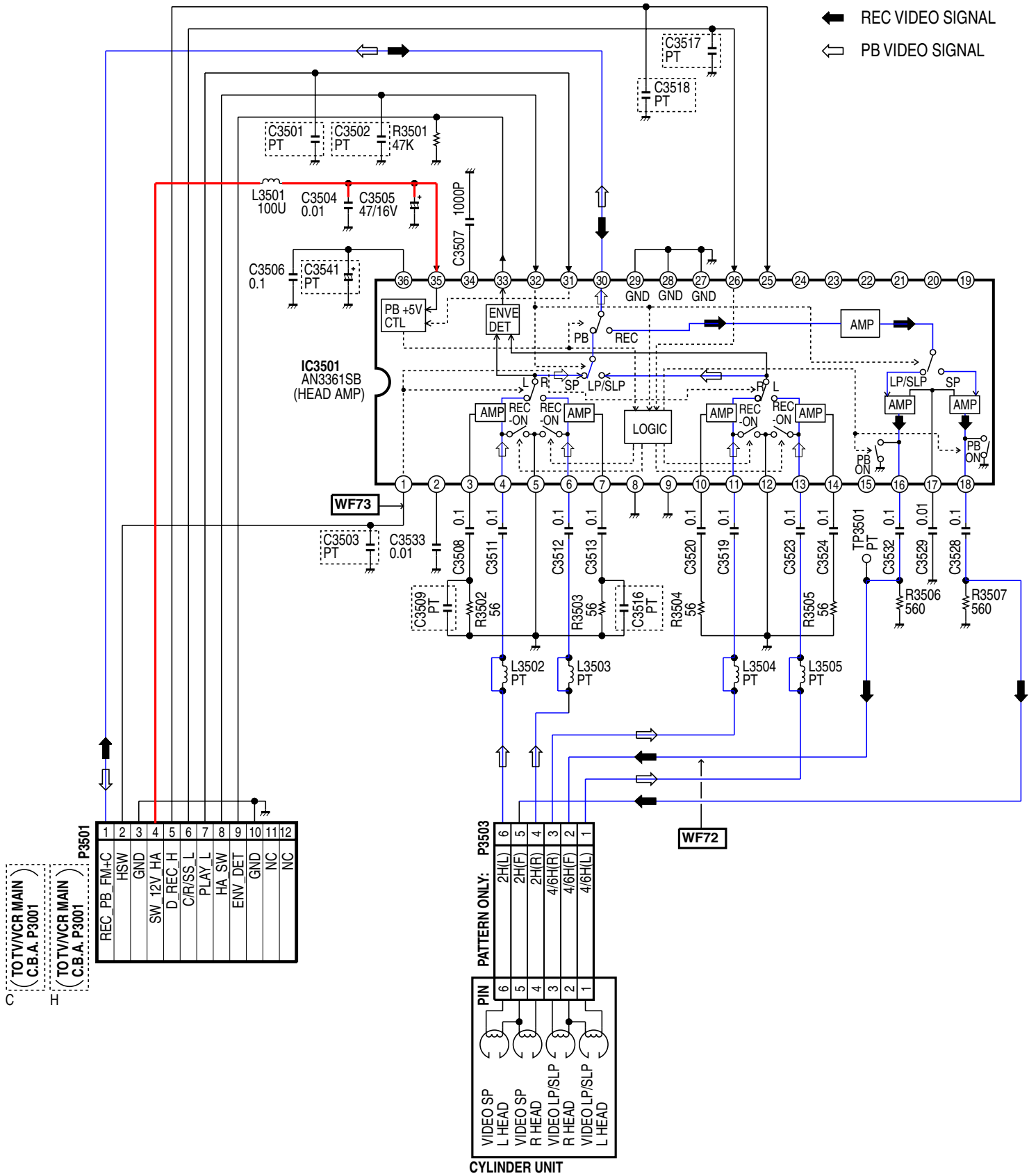
**LINK TO SIGNAL WAVEFORM**

LSJB2008

**PVQ-1312W/PV-C1322-K/PVQ-2012/VV-2002/PV-C2022-K/PVQ-2512**  
**HEAD AMP SCHEMATIC DIAGRAM**



HEAD AMP SCHEMATIC DIAGRAM (C, H)



NOTE: FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.


COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

[LINK TO SIGNAL WAVEFORM](#)



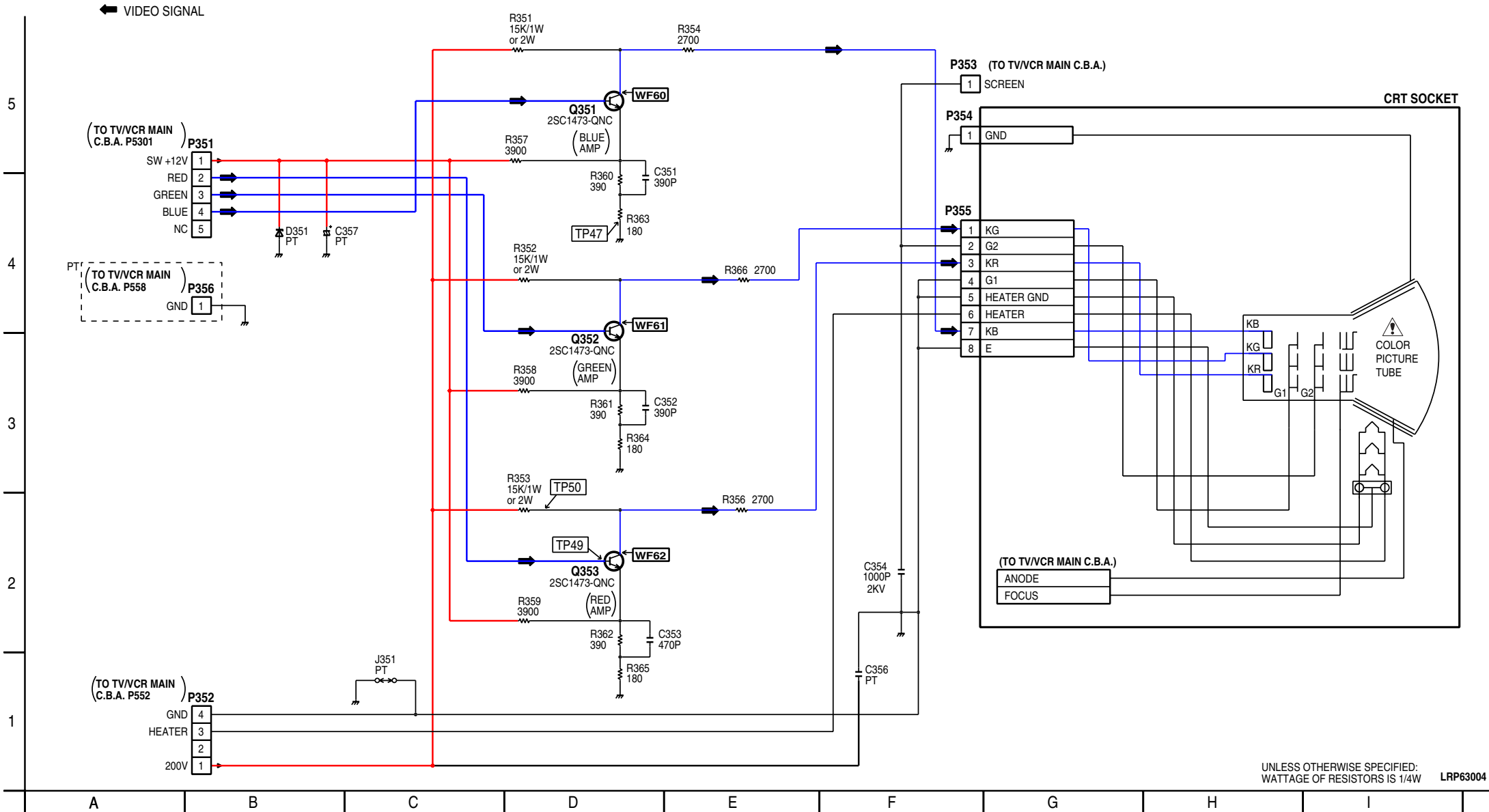
CRT SCHEMATIC DIAGRAM (A, B, C)

IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.


NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.

COMPARISON CHART OF MODELS & MARKS	
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT





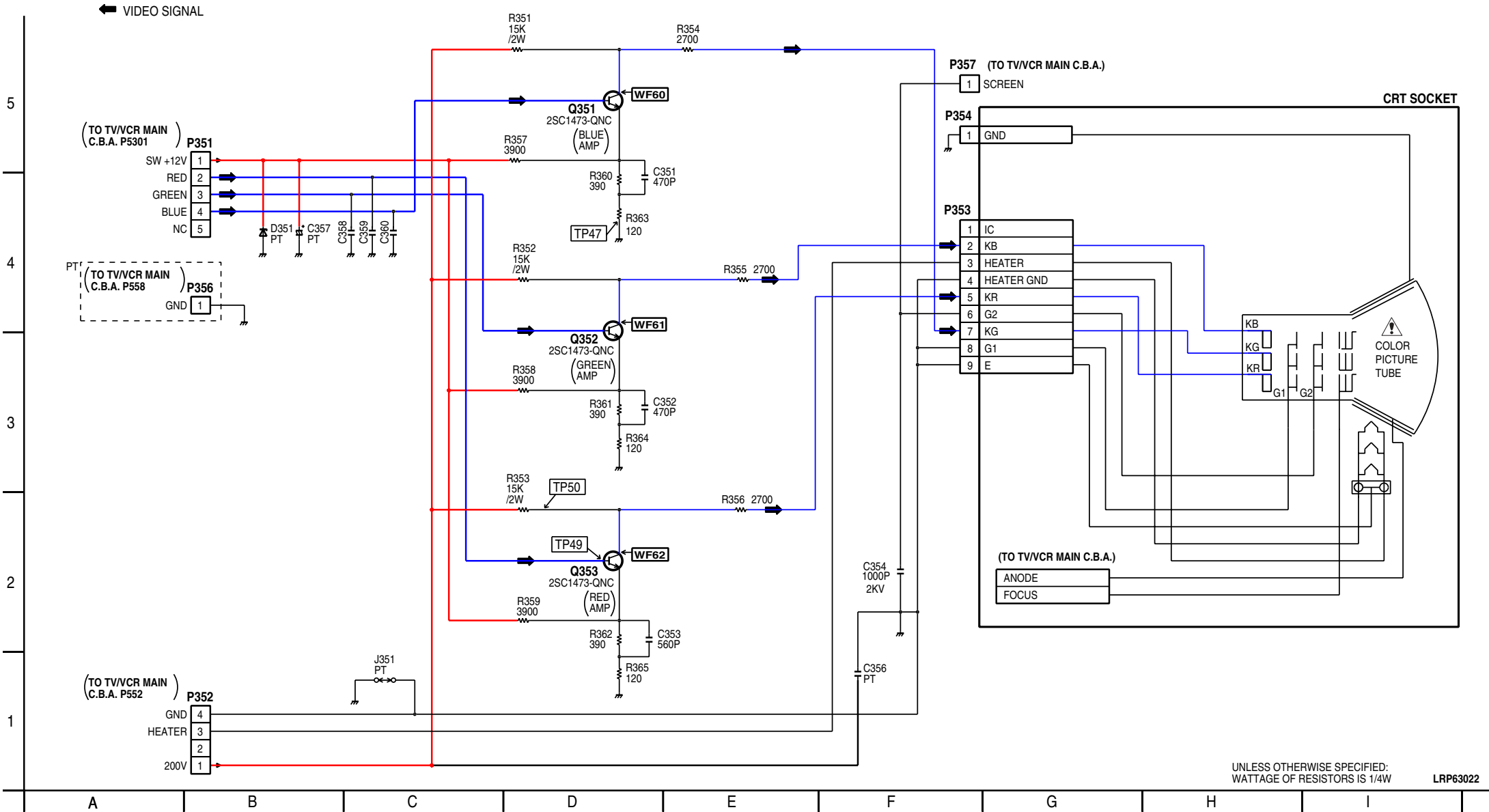
CRT SCHEMATIC DIAGRAM (D, E, F)

IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.

COMPARISON CHART OF MODELS & MARKS	
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT




LINK TO SIGNAL WAVEFORM

PVQ-2012/VV-2002/PV-C2022-K  
CRT SCHEMATIC DIAGRAM



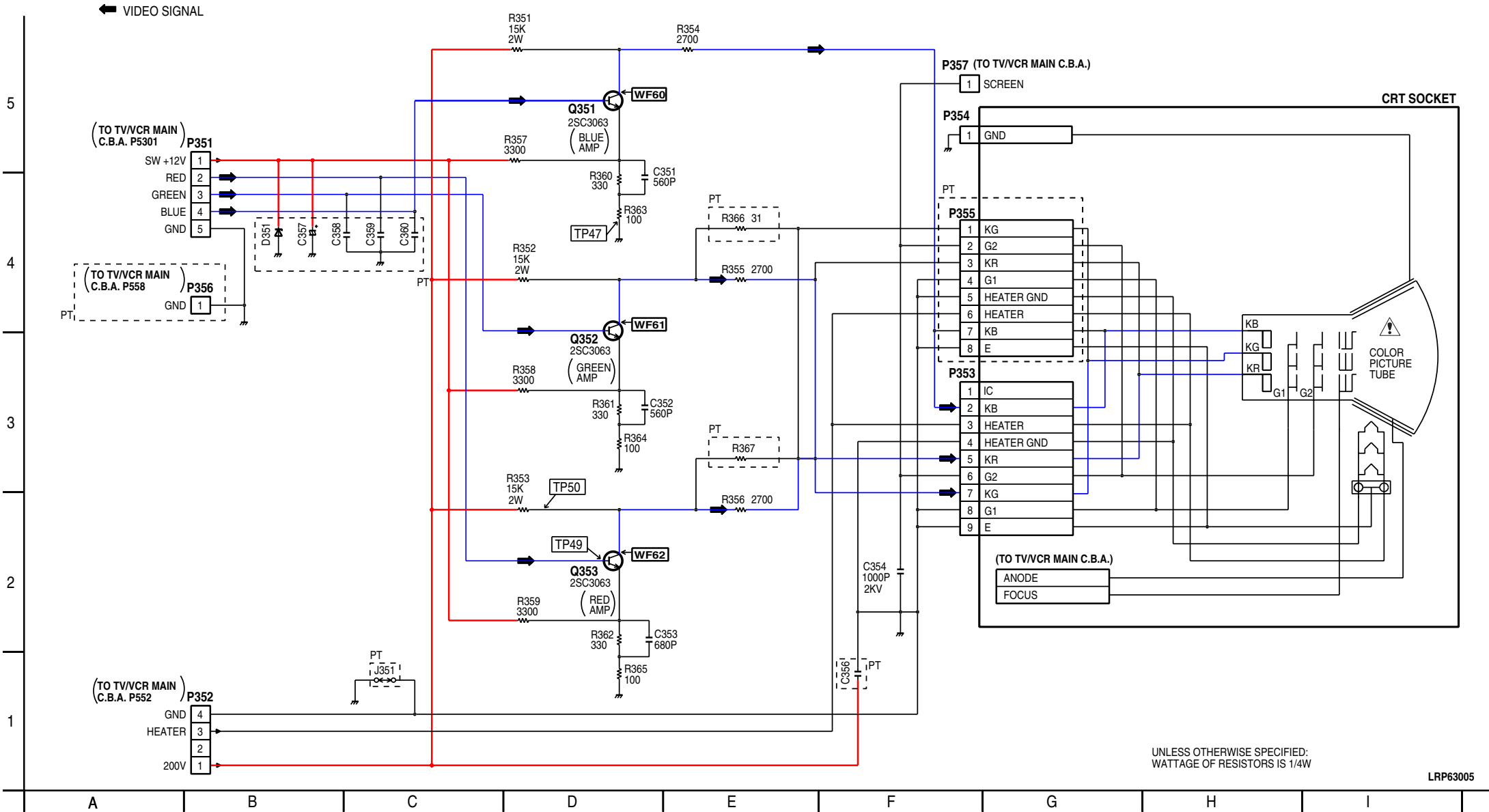
CRT SCHEMATIC DIAGRAM (G, H)

IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.


COMPARISON CHART OF MODELS & MARKS	
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT



[LINK TO SIGNAL WAVEFORM](#)



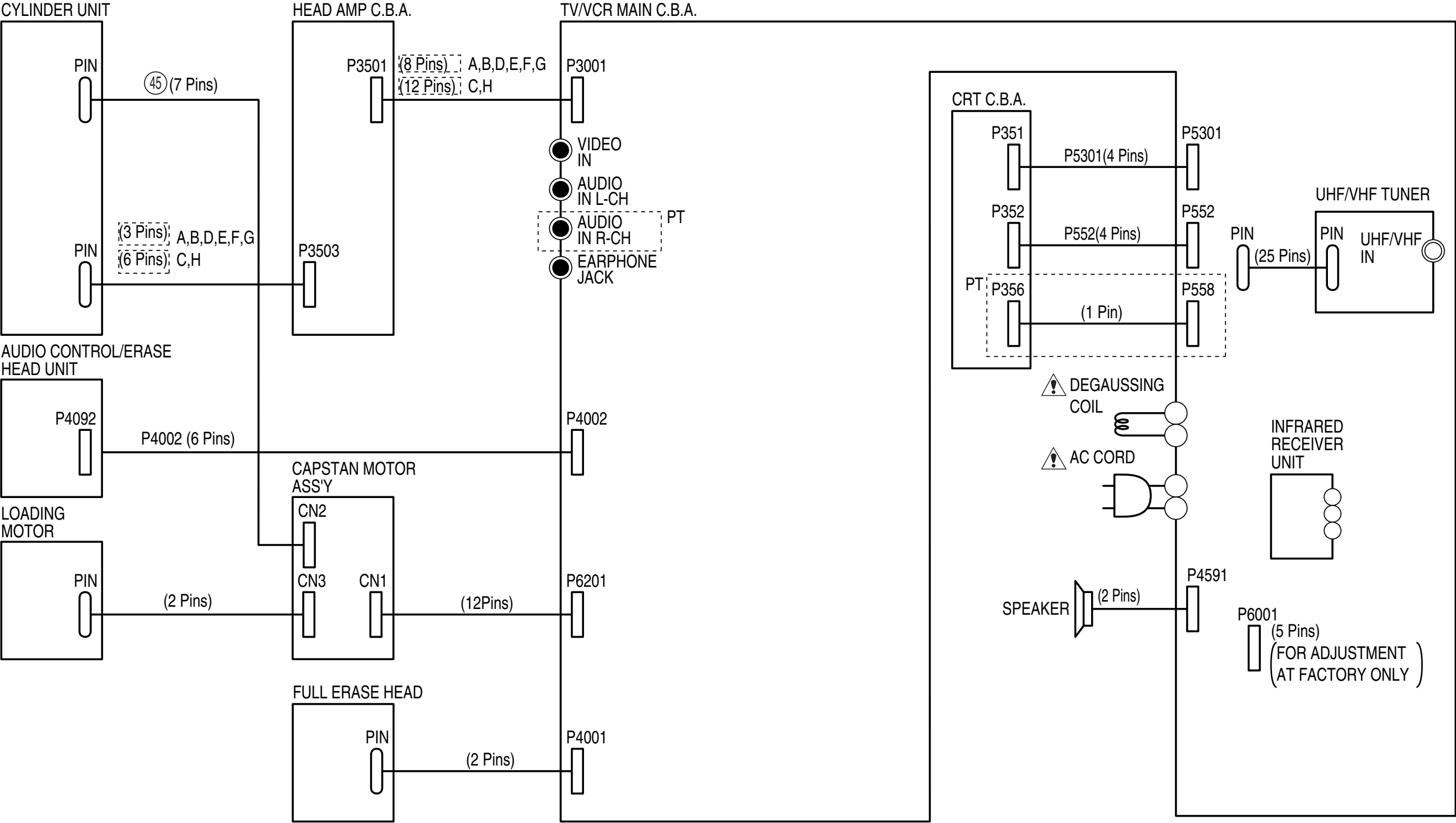
INTERCONNECTION SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART  
OF MODELS & MARKS

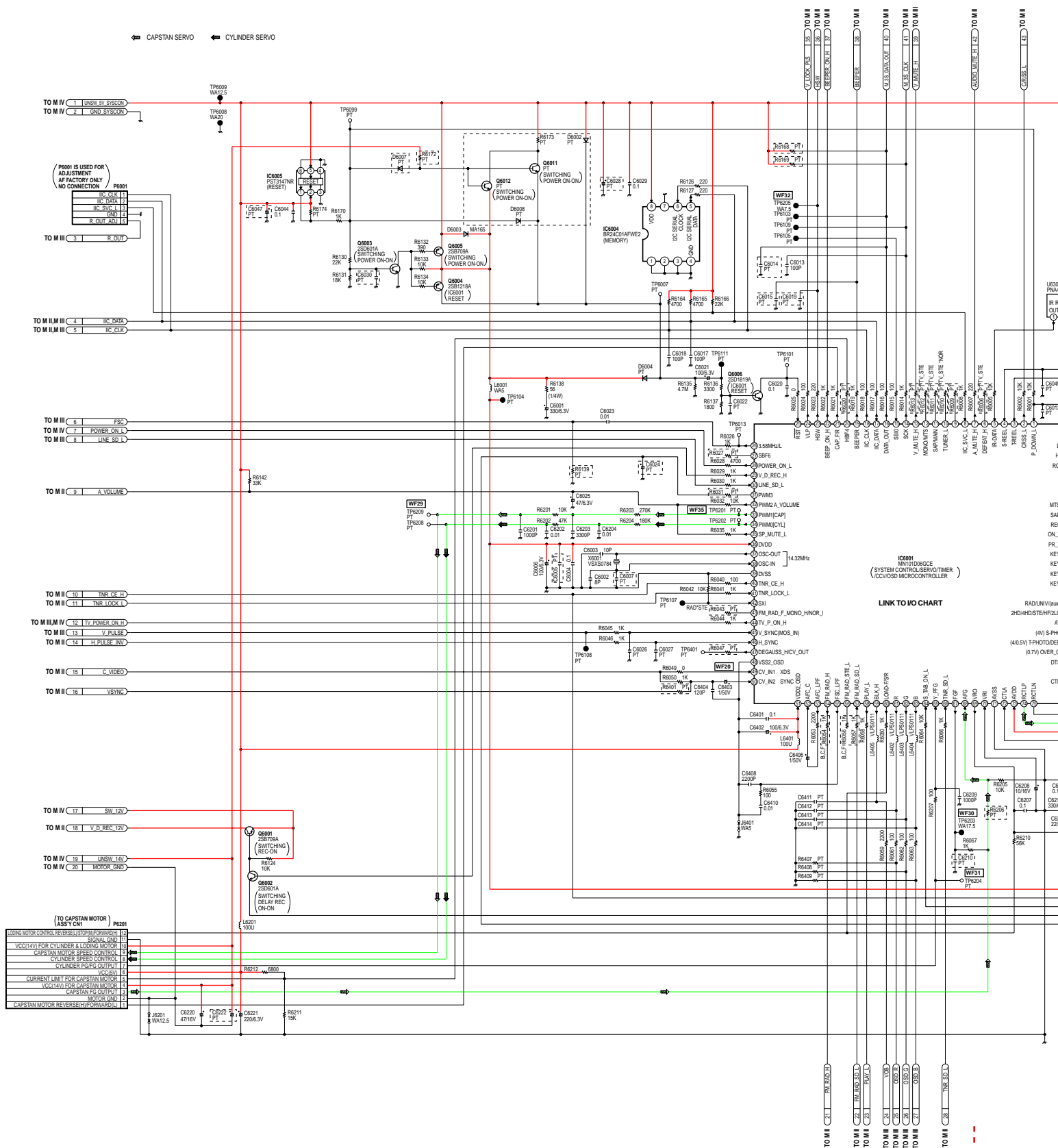
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT





## 8.2. TV/VCR MAIN SCHEMATIC DIAGRAM (Models: PVQ-1322W/PV-C1322-K/PV-C

**TV/VCR MAIN I (SYSTEM CONTROL/SERVO/CCV/OSD/OPERATION) SCHEMATIC DIAGRAM (A, B, C, D,**





# C1322-K/PV-C1352W-K/PVQ-2012/VV-2002/PV-C2022-K)

RAM (A, B, C, D, E, F)

NOTE:

FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

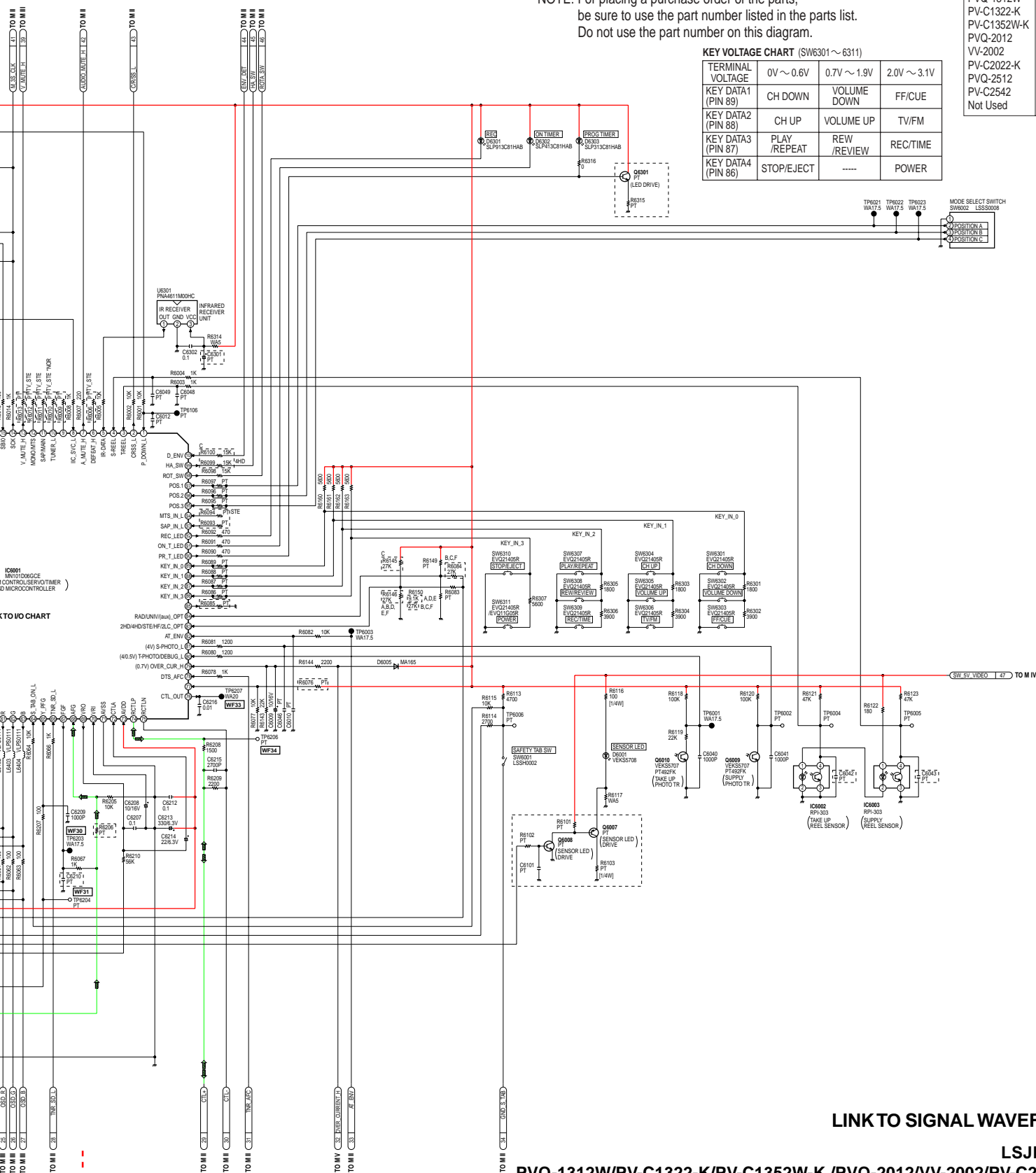
NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

KEY VOLTAGE CHART (SW6301 ~ 6311)

TERMINAL VOLTAGE	0V ~ 0.6V	0.7V ~ 1.9V	2.0V ~ 3.1V
KEY DATA1 (PIN 89)	CH DOWN	VOLUME DOWN	FF/CUE
KEY DATA2 (PIN 88)	CH UP	VOLUME UP	TV/FM
KEY DATA3 (PIN 87)	PLAY /REPEAT	REW /REVIEW	REC/TIME
KEY DATA4 (PIN 86)	STOP/EJECT	----	POWER



LINK TO SIGNAL WAVEFORM

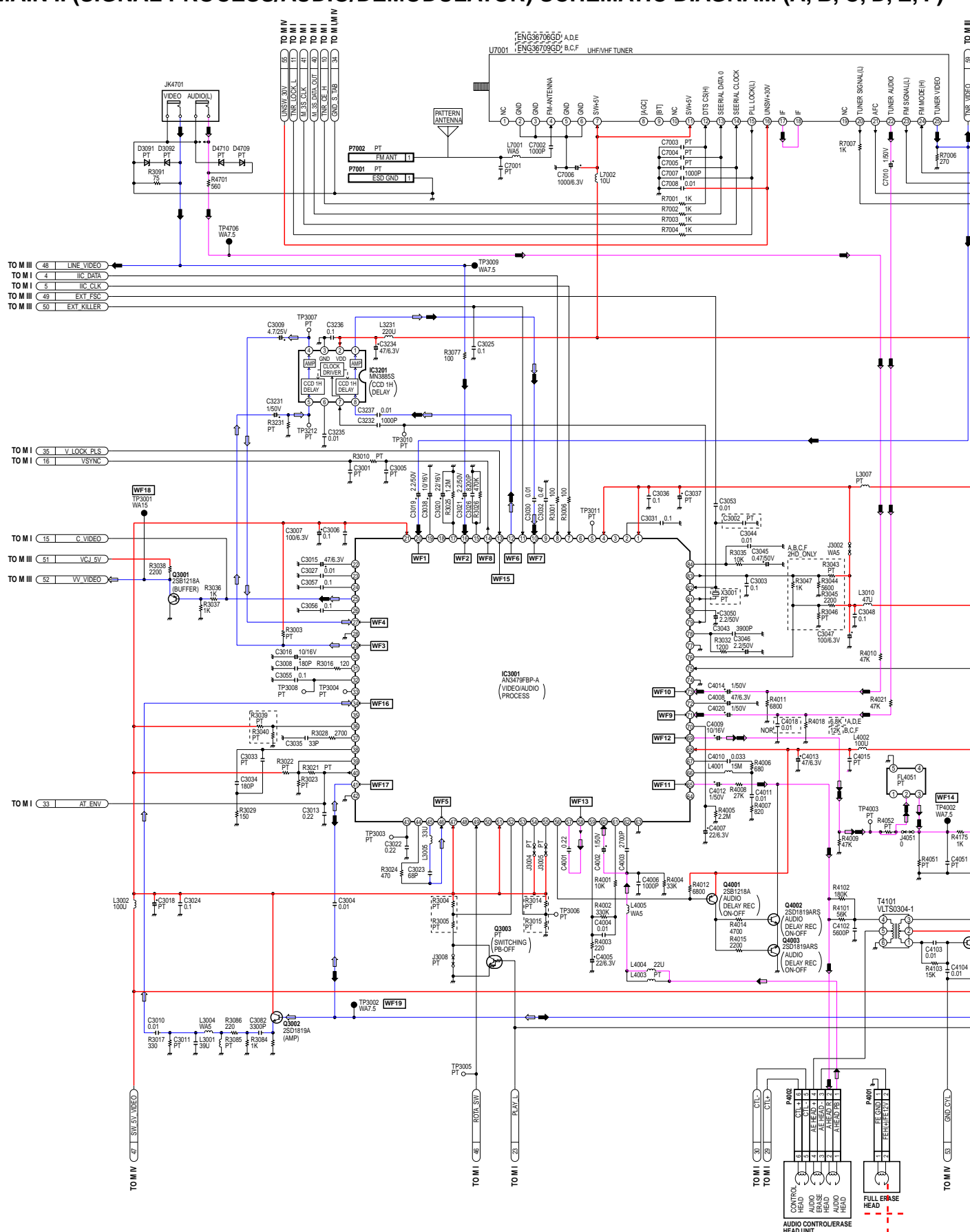
LSJB2012

PVQ-1312W/PV-C1322-K/PV-C1352W-K /PVQ-2012/VV-2002/PV-C2022-K

TV/VCR MAIN I (SYSTEM CONTROL/SERVO/CCV/OSD/OPERATION) SCHEMATIC DIAGRAM



# TV/VCR MAIN II (SIGNAL PROCESS/AUDIO/DEMODULATOR) SCHEMATIC DIAGRAM (A, B, C, D, E, F)



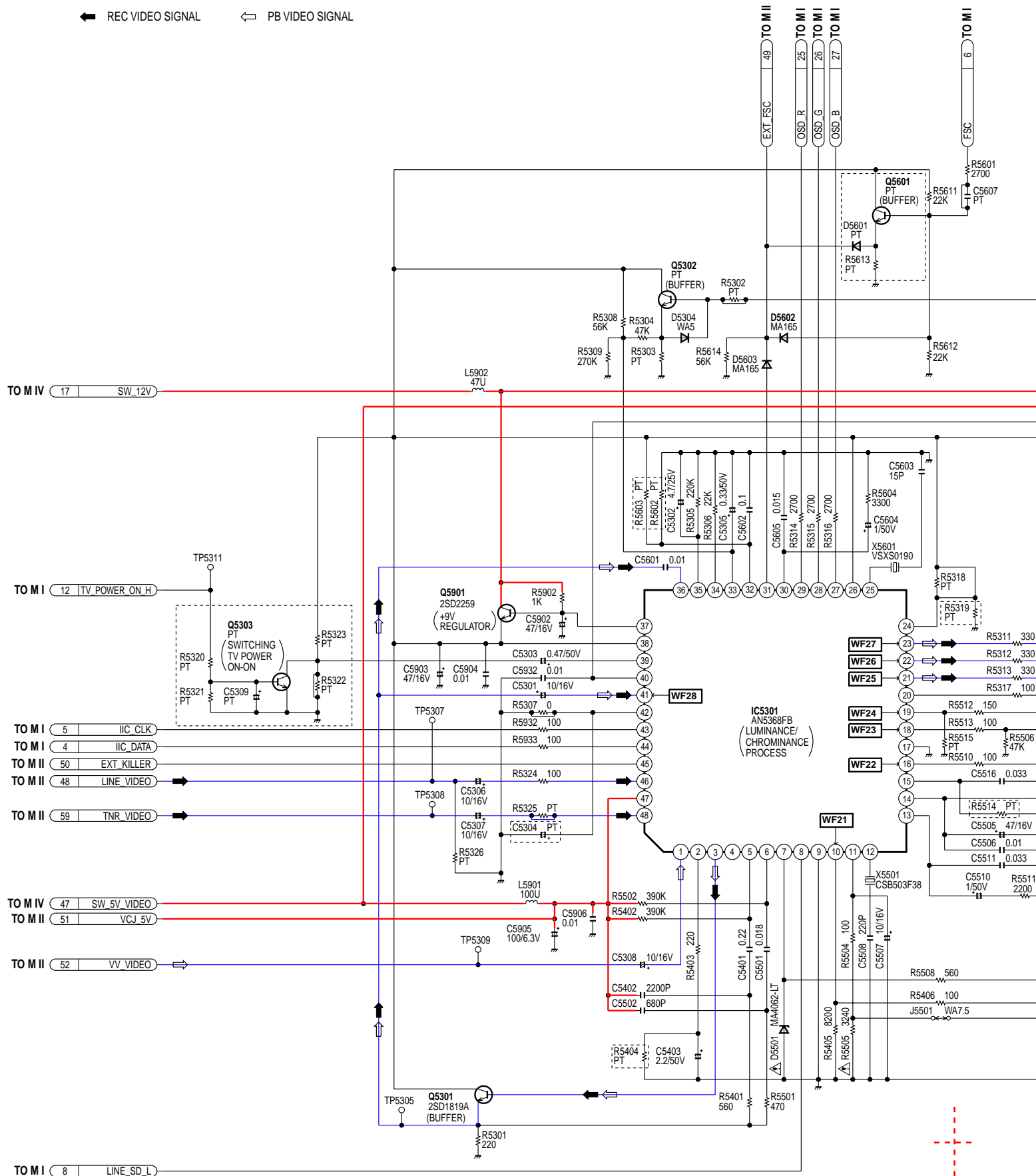


[illegible]

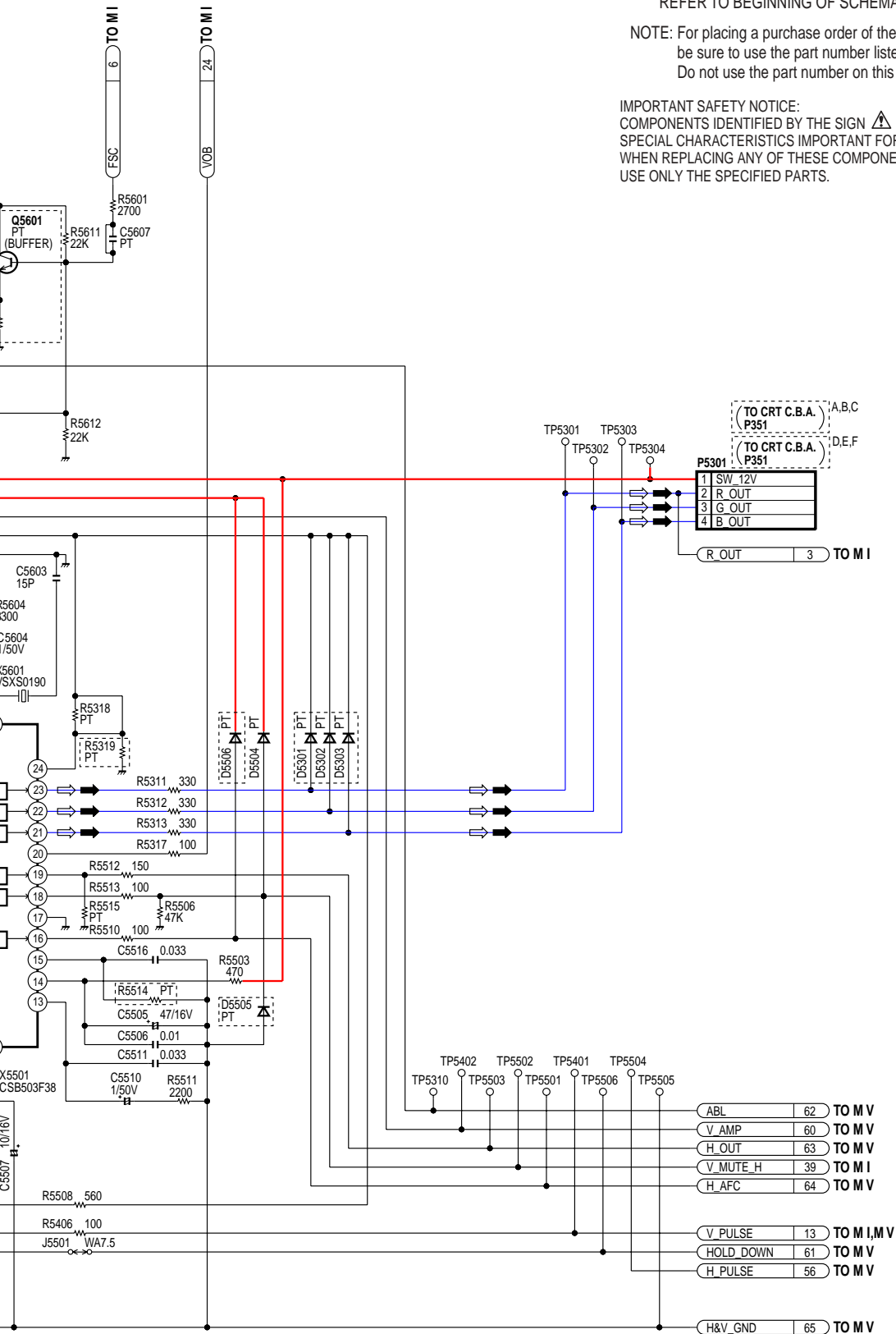


# TV/VCR MAIN III (TV Y/C PROCESS) SCHEMATIC DIAGRAM (A, B, C, D, E, F)

← REC VIDEO SIGNAL      ⇐ PB VIDEO SIGNAL








# NOTE:

FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.

IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

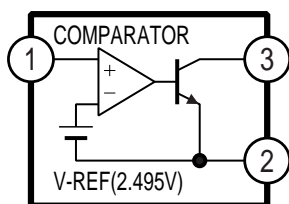
## COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

[LINK TO SIGNAL WAVEFORM](#)


LSJB2012  
PVQ-1312W/PV-C1322-K/PV-C1352W-K/PVQ-2012/VV-2002/PV-C2022-K  
TV/VCR MAIN III (TV Y/C PROCESS) SCHEMATIC DIAGRAM







HAZARD,  
5/250V FUSE.  
UE LES RISQUES  
E MÊME

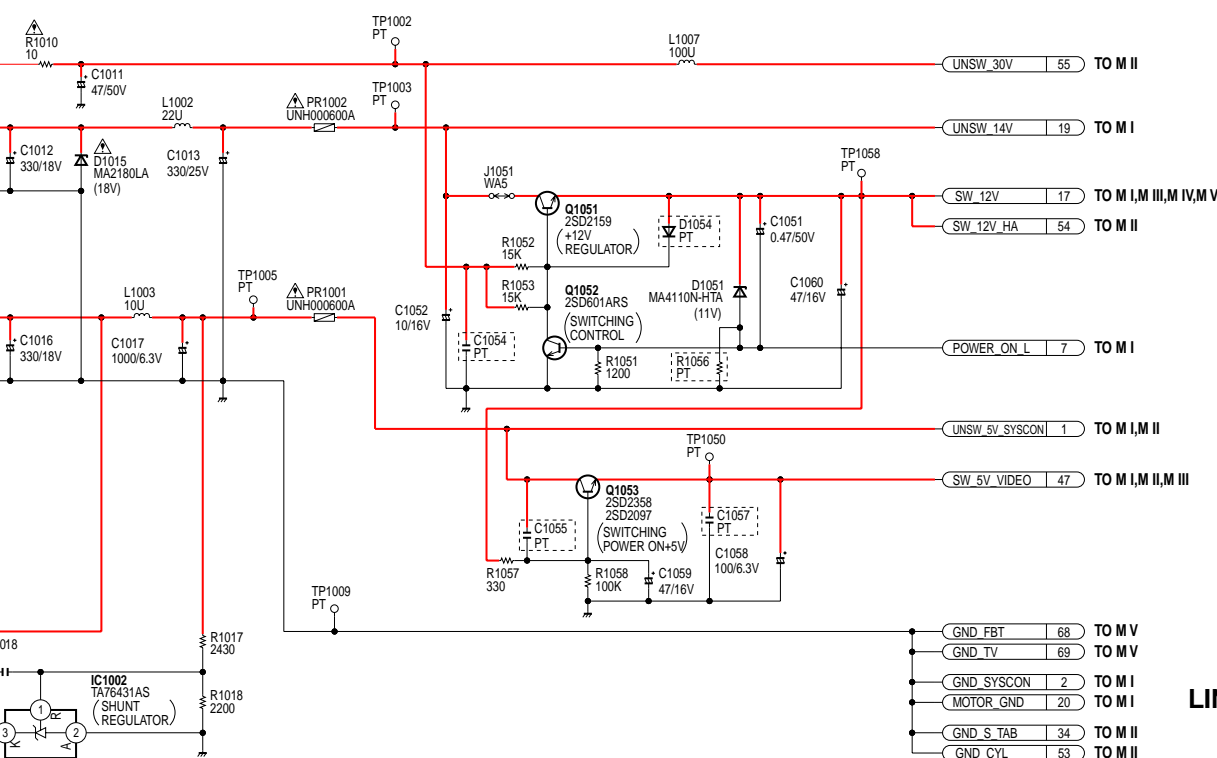
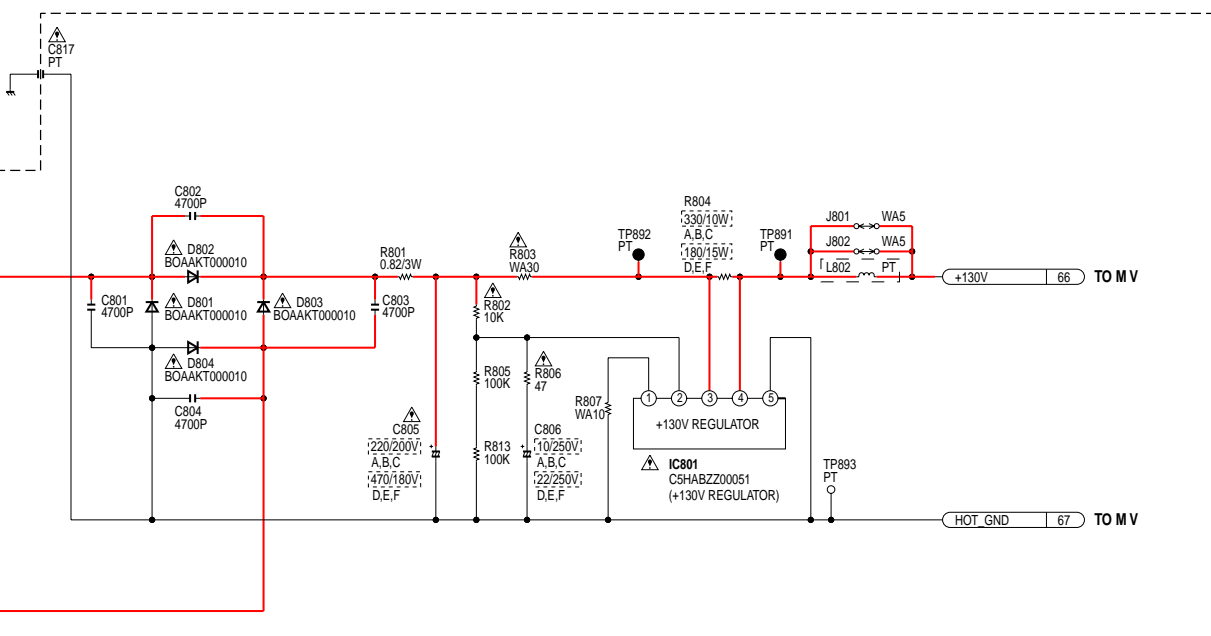
IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.

COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

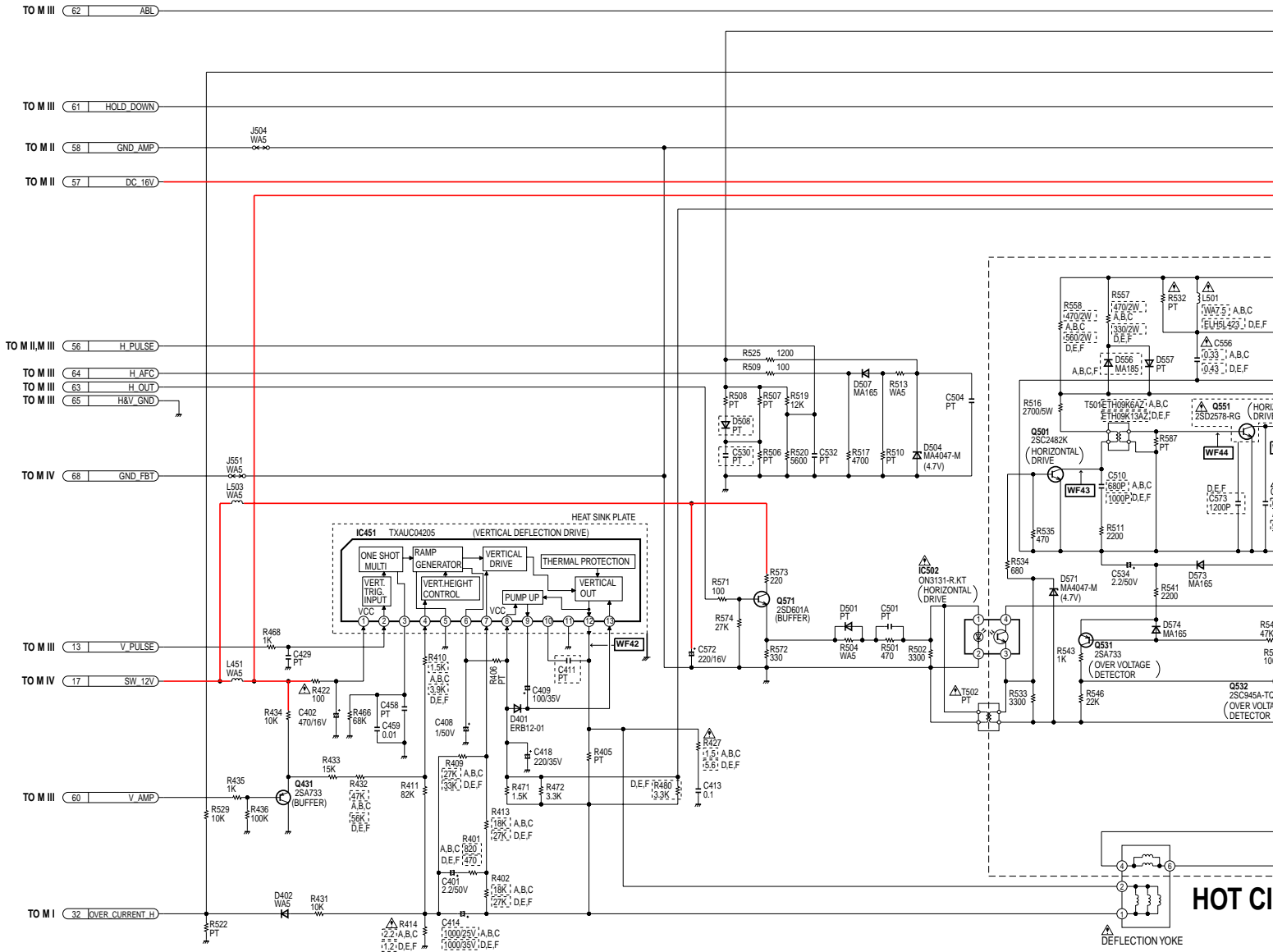


LINK TO SIGNAL WAVEFORM

LSJB2012  
PVQ-1312W/PV-C1322-K/PV-C1352W-K/PVQ-2012/VV-2002/PV-C2022-K  
TV/VCR MAIN IV (POWER SUPPLY) SCHEMATIC DIAGRAM



# TV/VCR MAIN V (TV) SCHEMATIC DIAGRAM (A, B, C, D, E, F)





MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

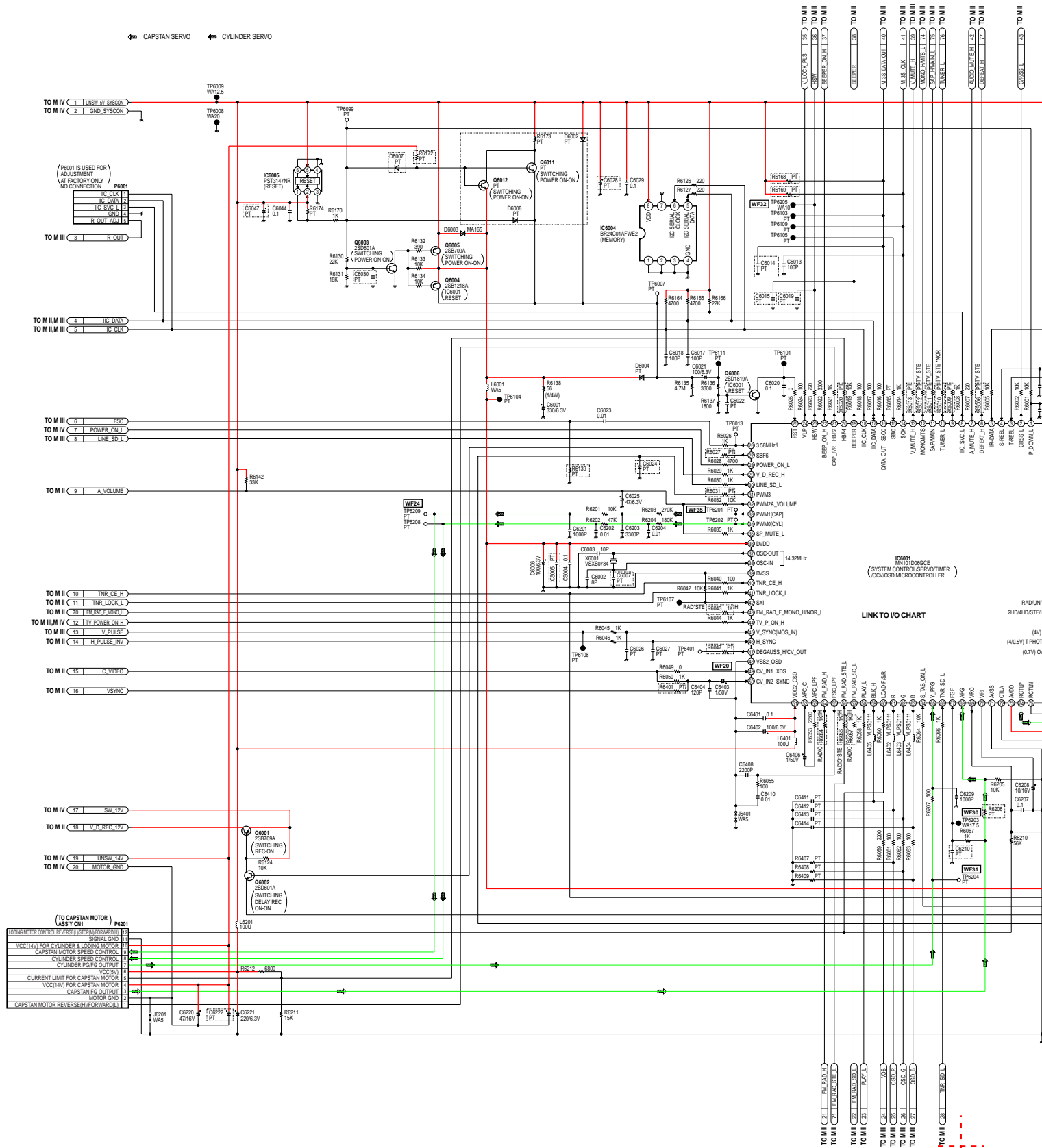


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### 8.3. TV/VCR MAIN SCHEMATIC DIAGRAM (Models: PVQ-2512/PV-C2542)

## TV/VCR MAIN I (SYSTEM CONTROL/SERVO/CCV/OSD/OPERATION) SCHEMATIC DIAGRAM (G, H)





NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

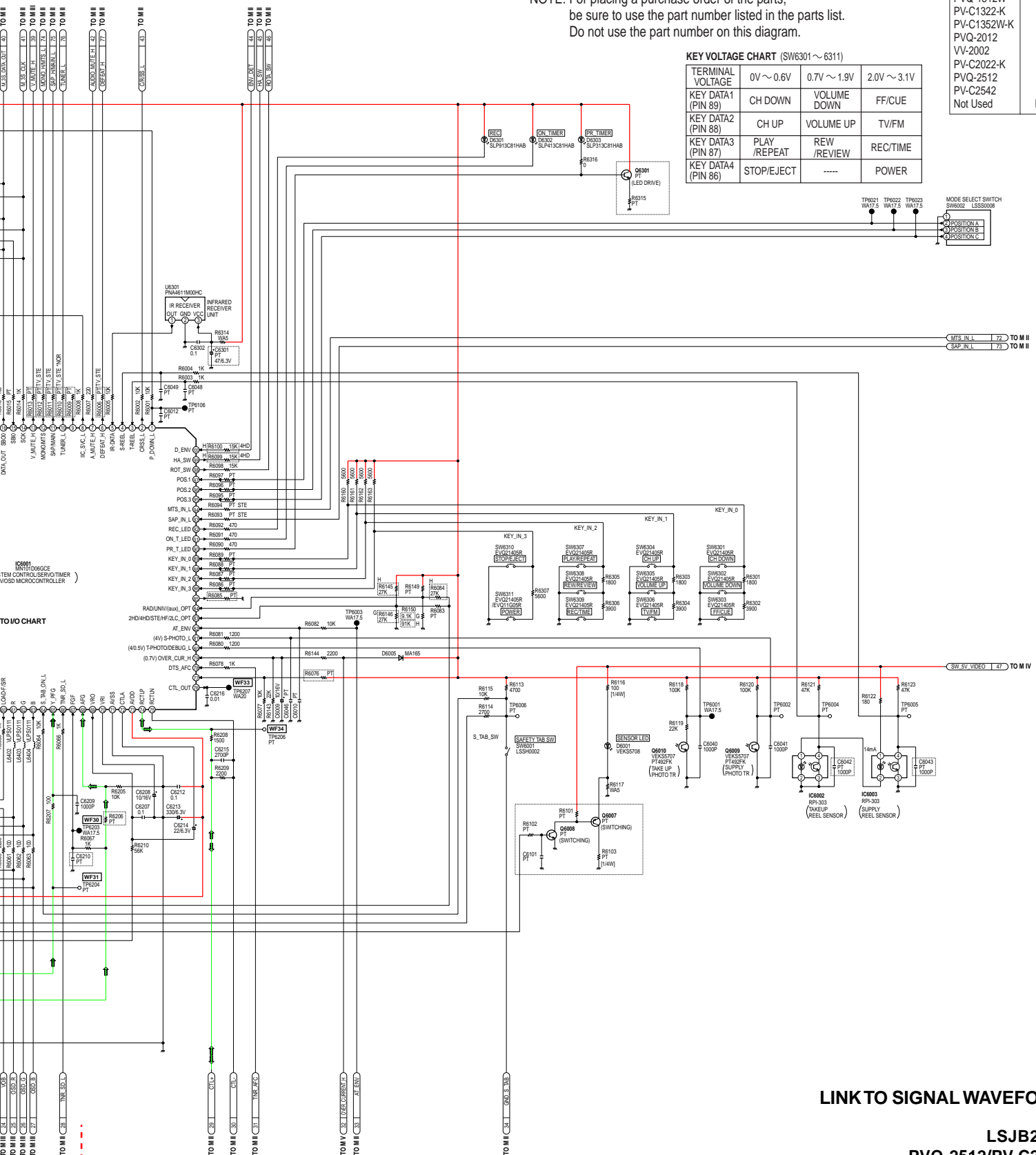
NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.

COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

# KEY VOLTAGE CHART (SW6301~6311)

TERMINAL VOLTAGE	0V ~ 0.6V	0.7V ~ 1.9V	2.0V ~ 3.1V
KEY DATA1 (PIN 89)	CH DOWN	VOLUME DOWN	FF/CUE
KEY DATA2 (PIN 88)	CH UP	VOLUME UP	TV/FM
KEY DATA3 (PIN 87)	PLAY /REPEAT	REW /REVIEW	REC/TIME
KEY DATA4 (PIN 86)	STOP/EJECT	-----	POWER



LINK TO SIGNAL WAVEFORM

LSJB2013

PVQ-2512/PV-C2542


TV/VCR MAIN I (SYSTEM CONTROL/SERVO/CCV/OSD/OPERATION) SCHEMATIC DIAGRAM







G, H)

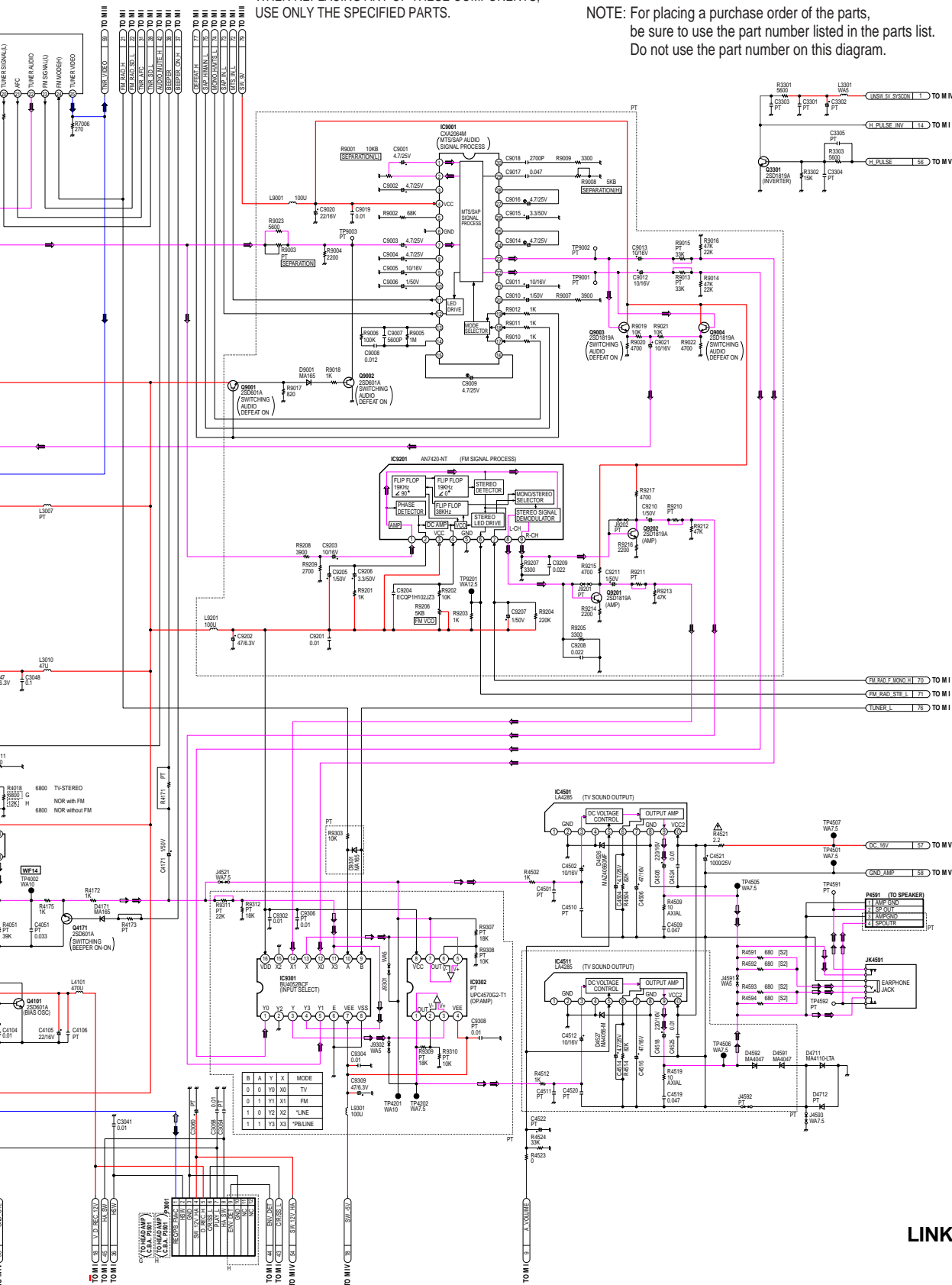
**IMPORTANT SAFETY NOTICE:**  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

**NOTE:**  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

**NOTE:** For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT



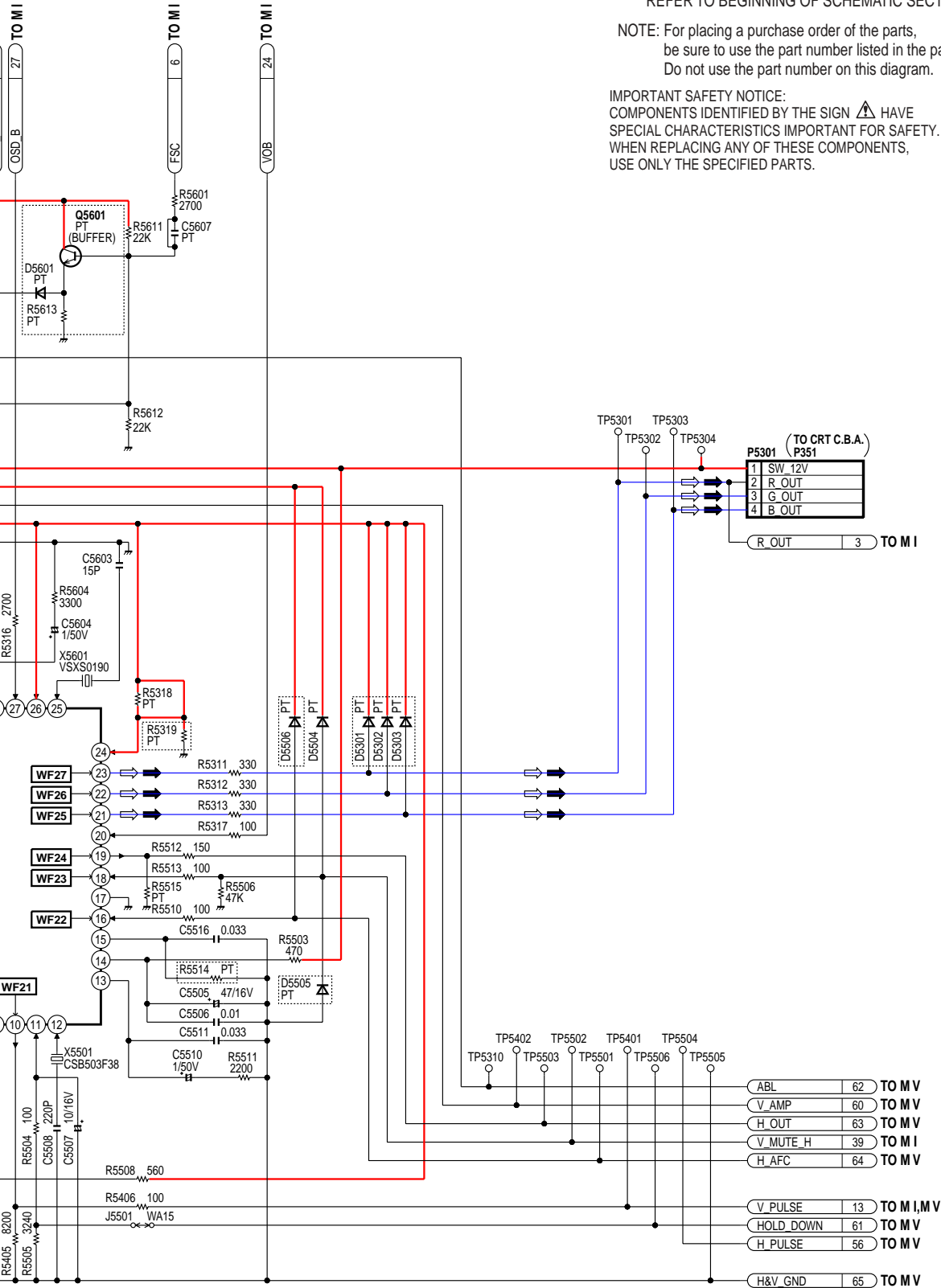


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← PB VIDEO SIGNAL







LINK TO SIGNAL WAVEFORM

LSJB2013  
PVQ-2512/PV-C2542  
TV/VCR MAIN III (TV Y/C PROCESS) SCHEMATIC DIAGRAM



IMPORTANT  
COMPONENT  
SPECIAL CHA  
WHEN REPLA  
USE ONLY TI

**CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,  
REPLACE ONLY WITH THE SAME TYPE 1.6A 125/250V FUSE.**  
**ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES  
D'INCENDIE N'I UTILISER QUE DES FUSIBLE DE MÊME  
TYPE 1.6A 125/250V**



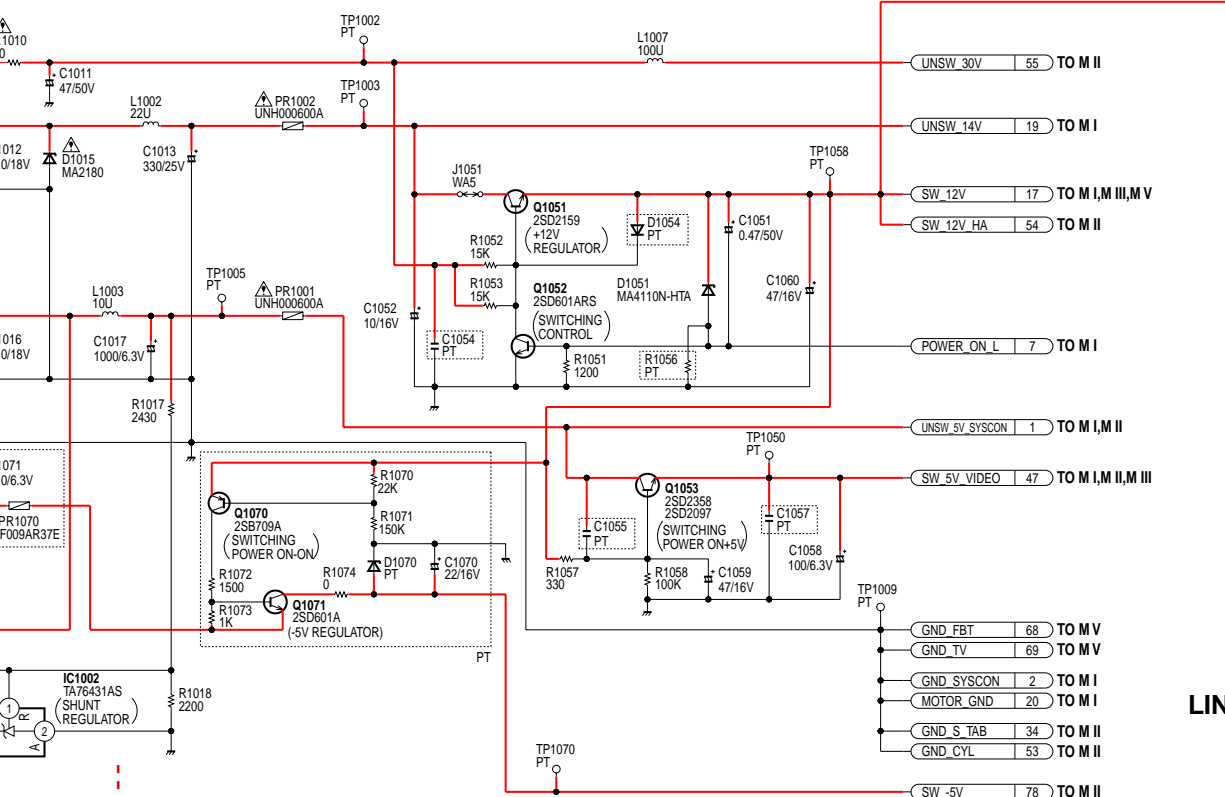


ES

FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

When placing a purchase order for the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT



LSJB2013

TV/VCR MAIN IV (POWER SUPPLY) SCHEMATIC DIAGRAM







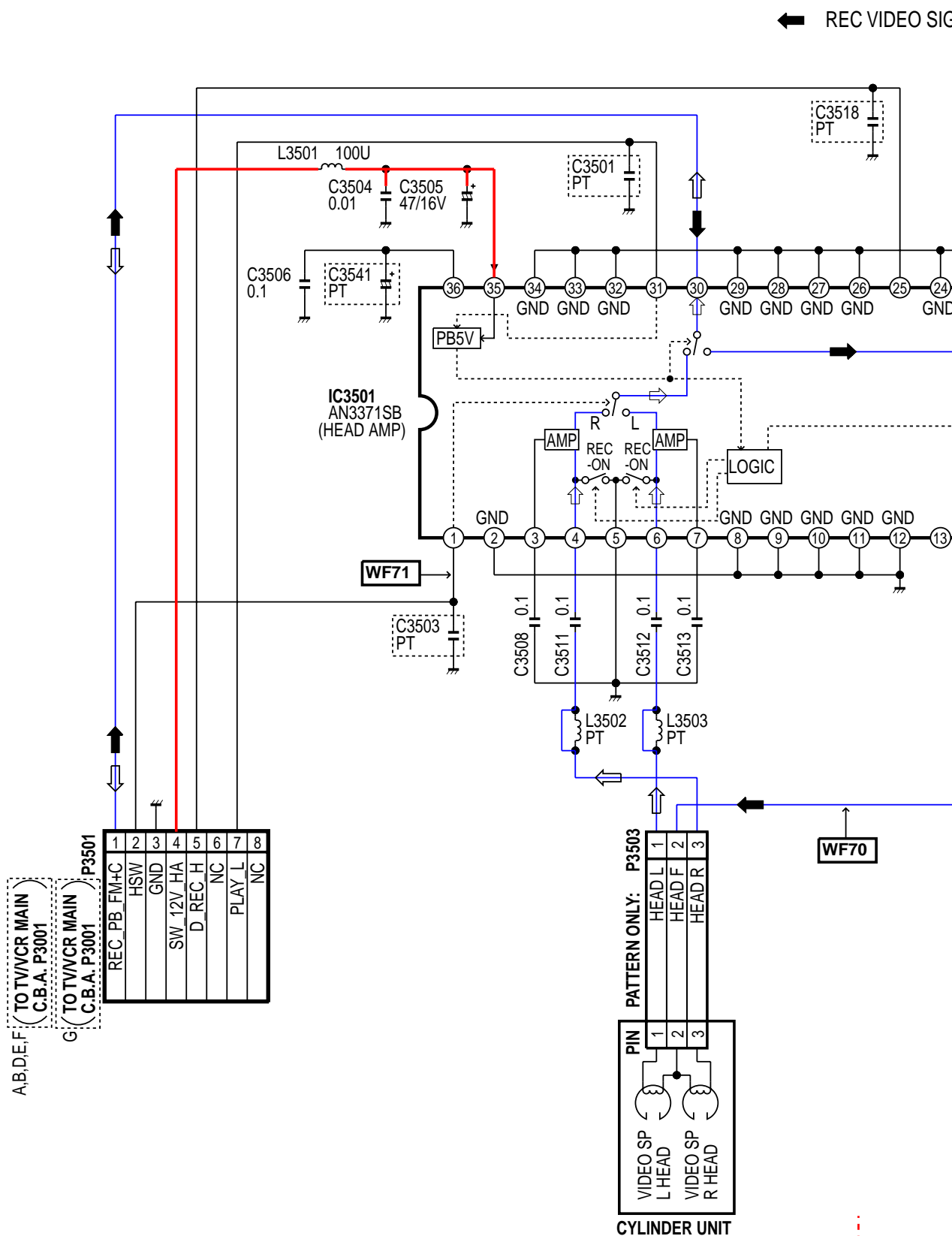
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT





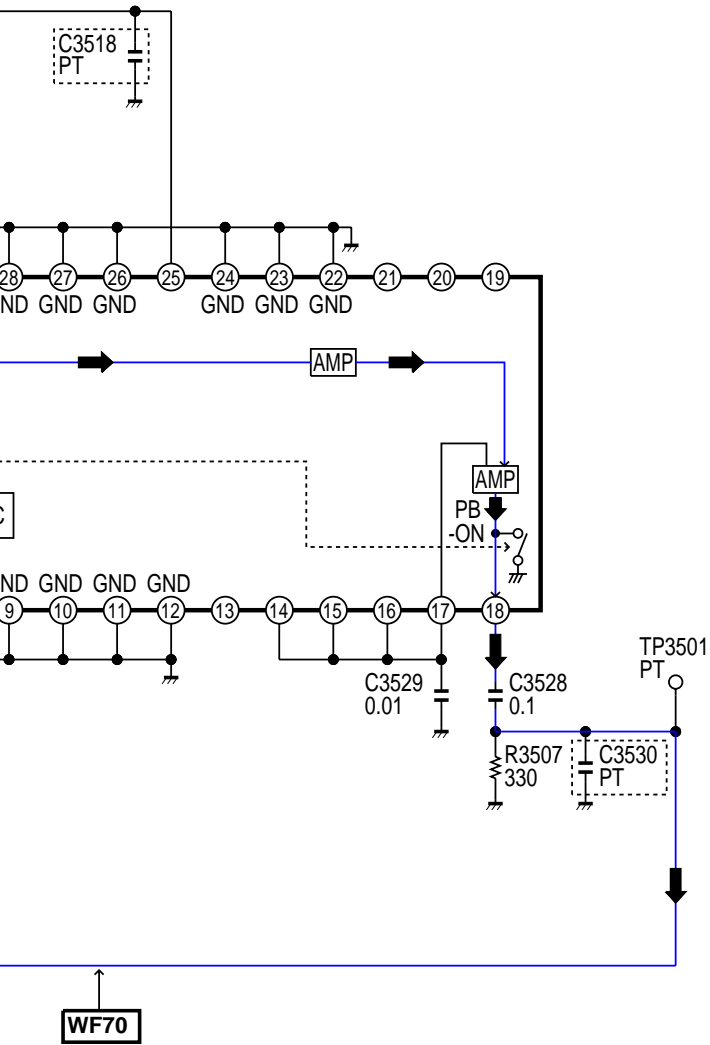
## 8.4. HEAD AMP SCHEMATIC DIAGRAM (Models: PVQ-1322W/PV-C1322-K/PVQ-2012)

### HEAD AMP SCHEMATIC DIAGRAM (A, B, D, E, F, G)





← REC VIDEO SIGNAL      ← PB VIDEO SIGNAL



NOTE:

FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.

COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

[LINK TO SIGNAL WAVEFORM](#)

LSJB2008  
PVQ-1312W/PV-C1322-K/PVQ-2012/VV-2002/PV-C2022-K/PVQ-2512  
HEAD AMP SCHEMATIC DIAGRAM









FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

## COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

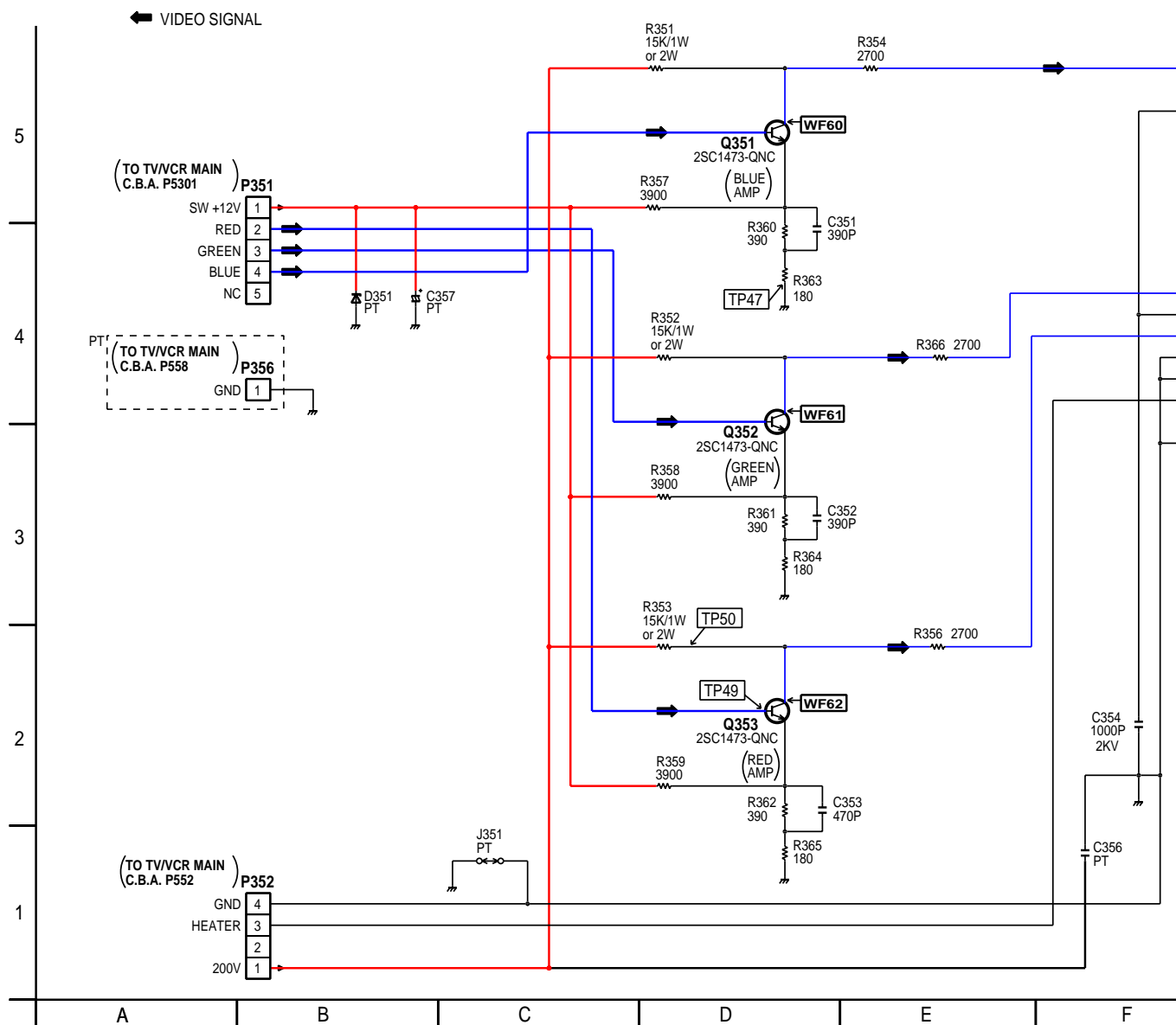
LSJB2009

### PV-C1352W-K/PV-C2542 HEAD AMP SCHEMATIC DIAGRAM




## 8.6. CRT SCHEMATIC DIAGRAM (Models: PVQ-1312W/PV-C1322-K/PV-C1352W-K)

### CRT SCHEMATIC DIAGRAM (A, B, C)





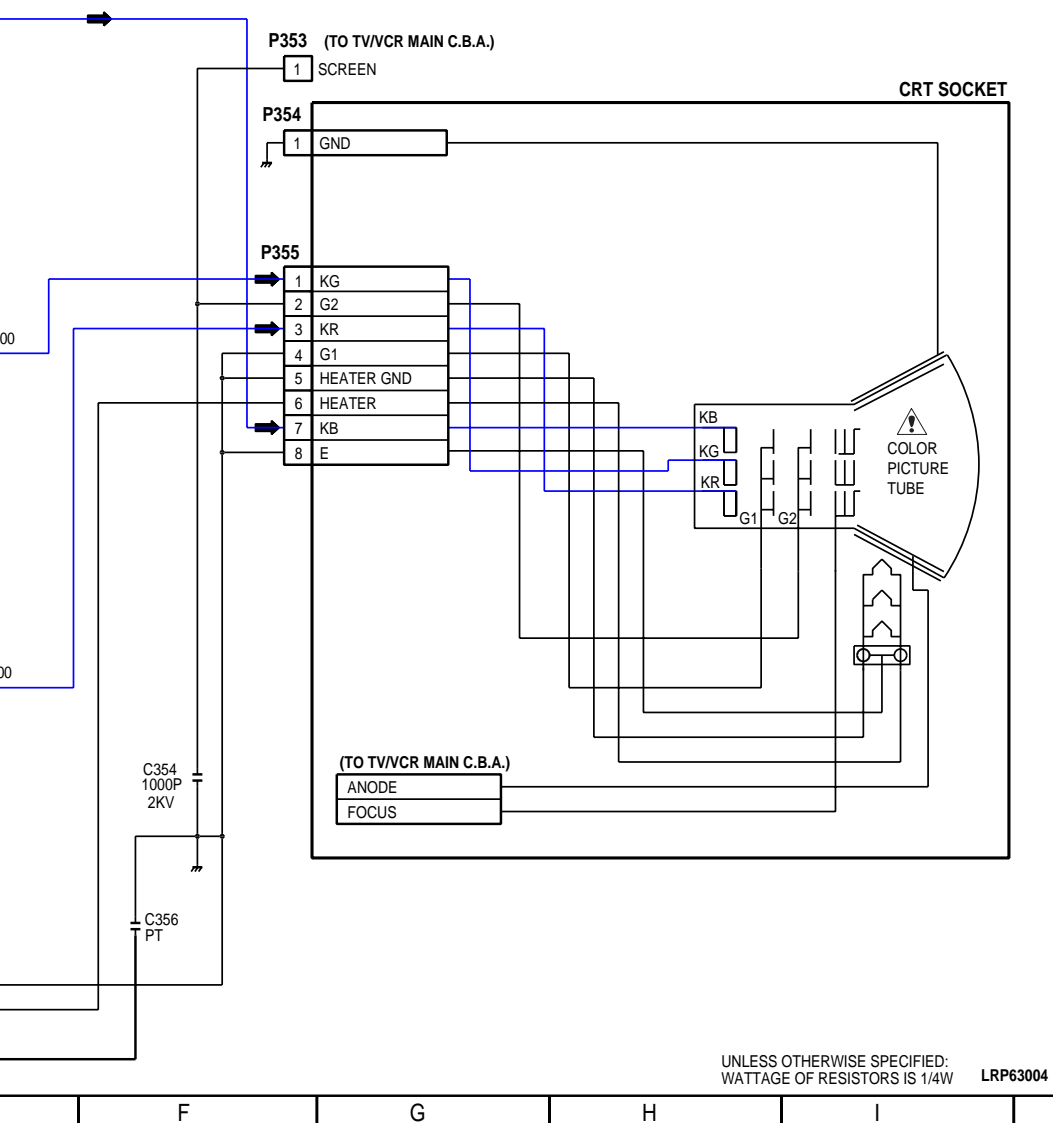
IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.

COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT



UNLESS OTHERWISE SPECIFIED:  
WATTAGE OF RESISTORS IS 1/4W LRP63004

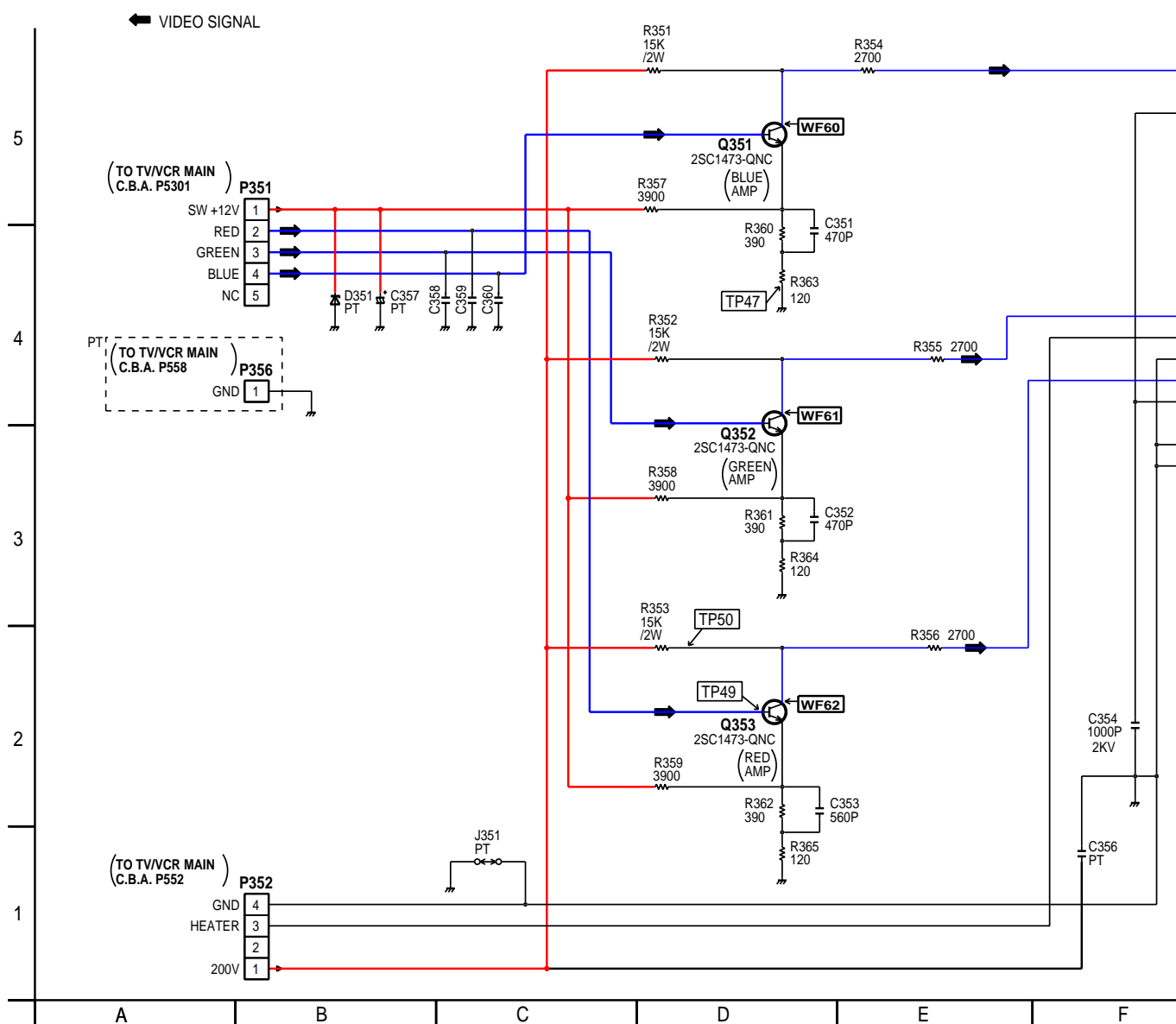
LINK TO SIGNAL WAVEFORM

PVQ-1312W/PV-C1322-K/PV-C1352W-K  
CRT SCHEMATIC DIAGRAM




## 8.7. CRT SCHEMATIC DIAGRAM (Models: PVQ-2012/VV-2002/PV-C2022-K)

### CRT SCHEMATIC DIAGRAM (D, E, F)





022-K)

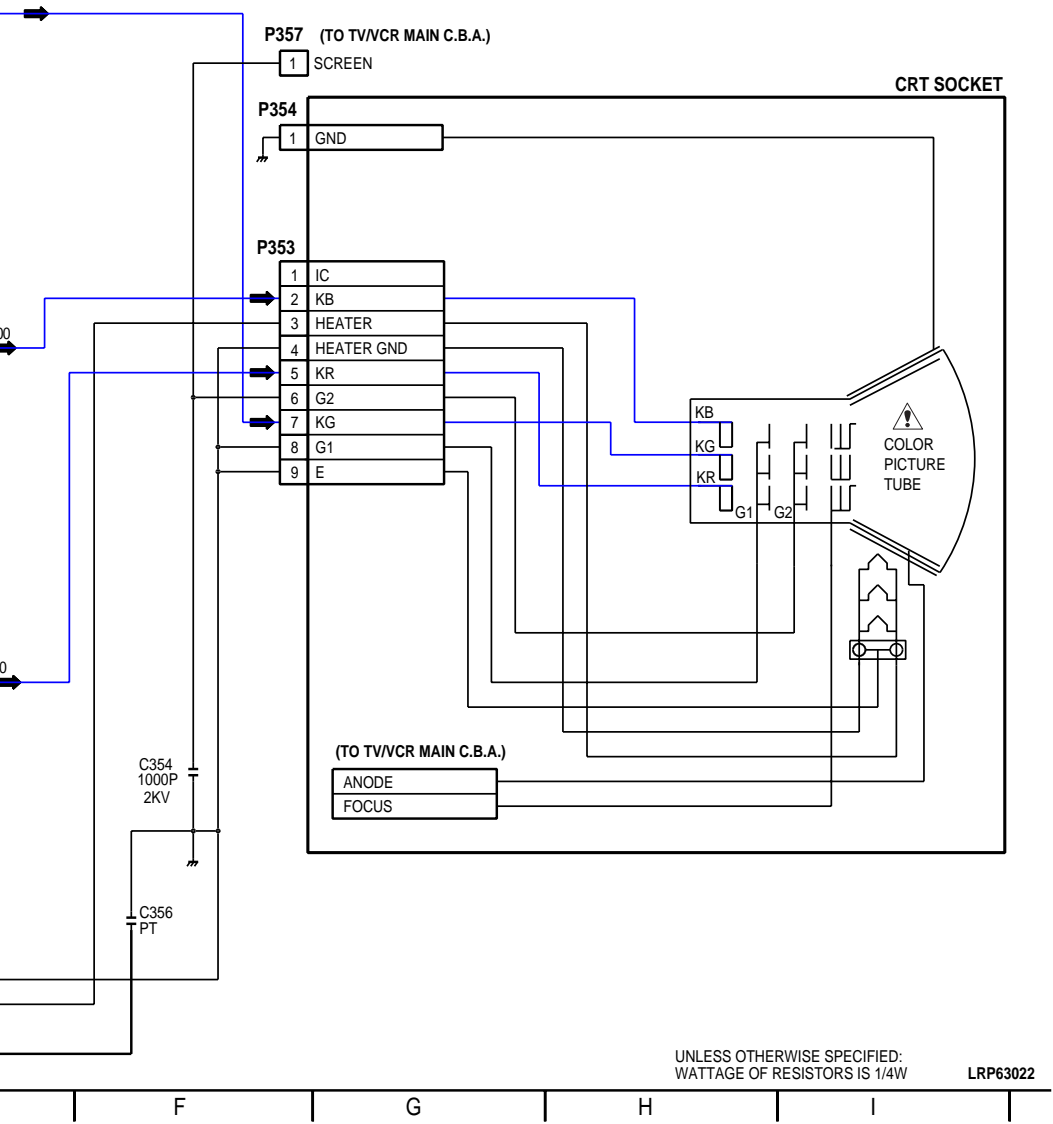
IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.

COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT



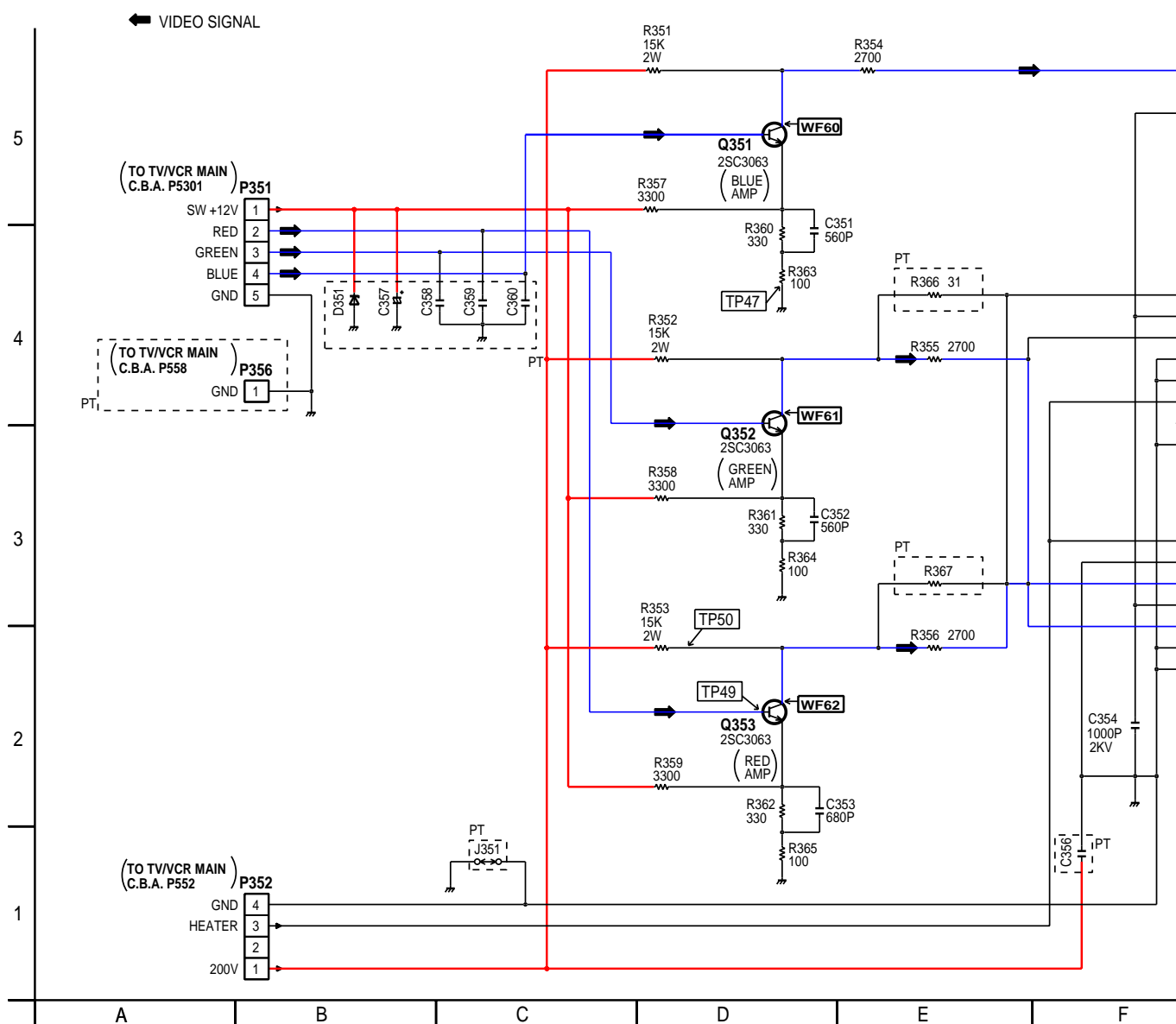
LINK TO SIGNAL WAVEFORM

PVQ-2012/VV-2002/PV-C2022-K  
CRT SCHEMATIC DIAGRAM




## 8.8. CRT SCHEMATIC DIAGRAM (Models: PVQ-2512/PV-C2542)

### CRT SCHEMATIC DIAGRAM (G, H)





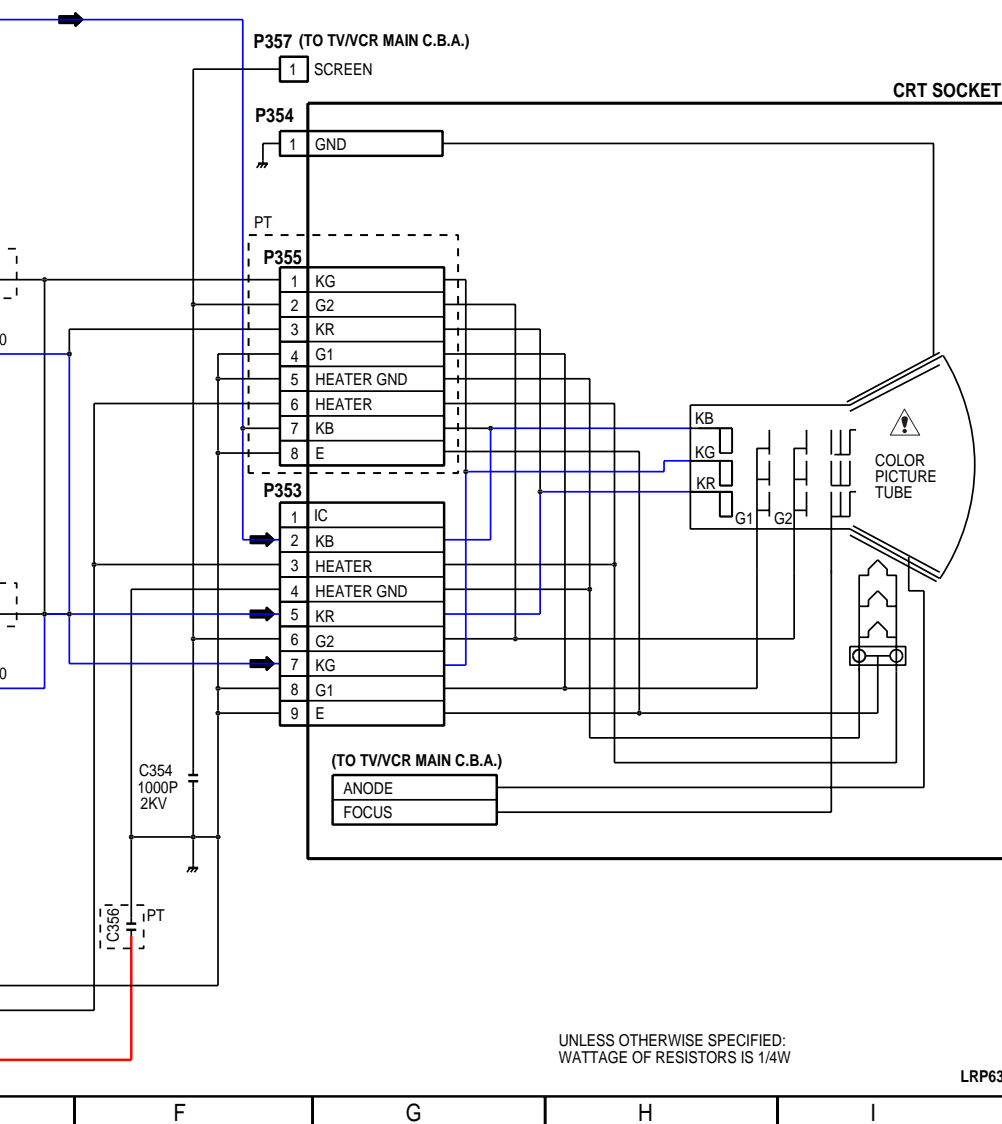
IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,  
be sure to use the part number listed in the parts list.  
Do not use the part number on this diagram.

COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT



[LINK TO SIGNAL WAVEFORM](#)

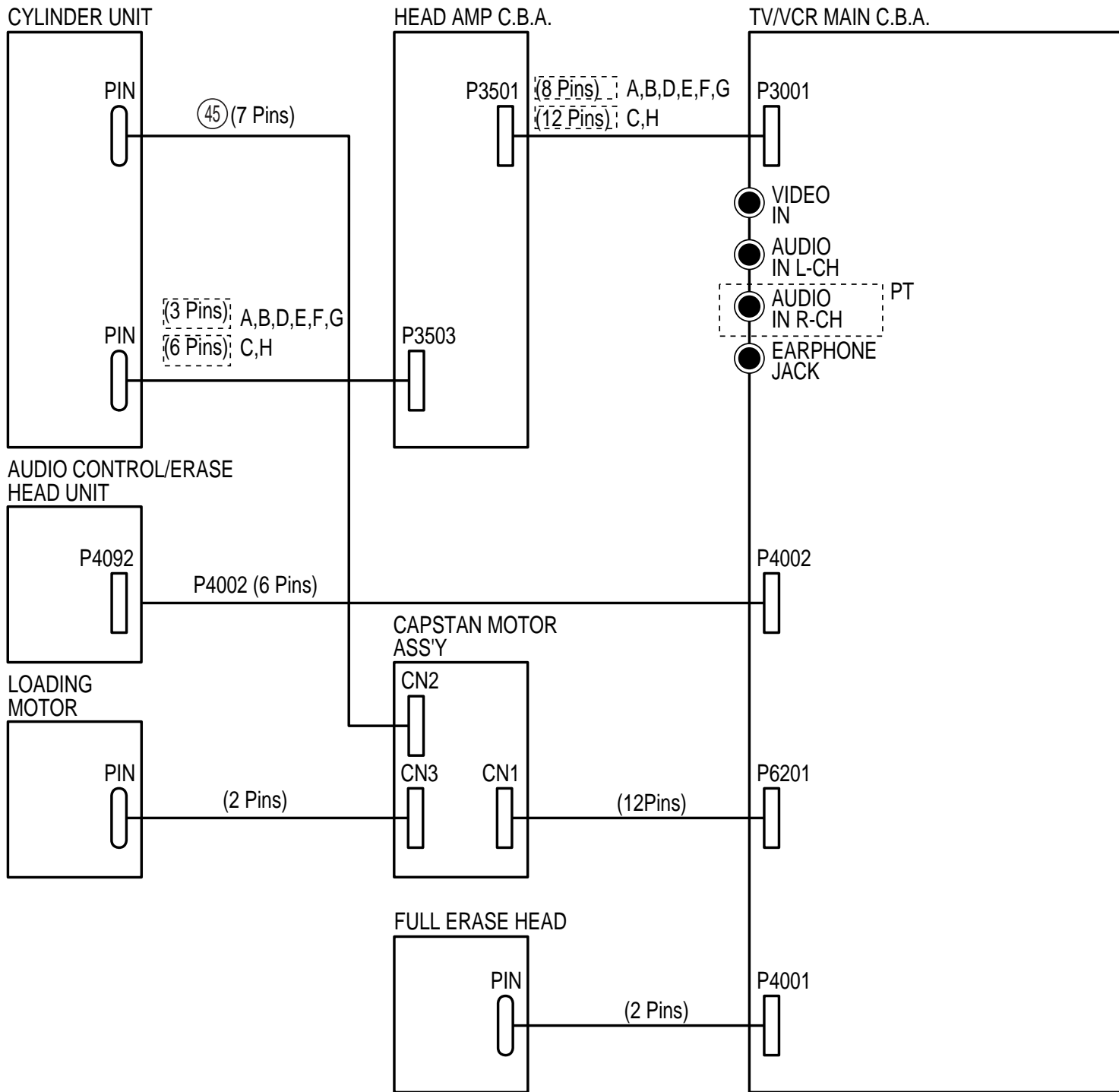
PVQ-2512/PV-C2542  
CRT SCHEMATIC DIAGRAM




## 8.9. INTERCONNECTION SCHEMATIC DIAGRAM



### INTERCONNECTION SCHEMATIC DIAGRAM



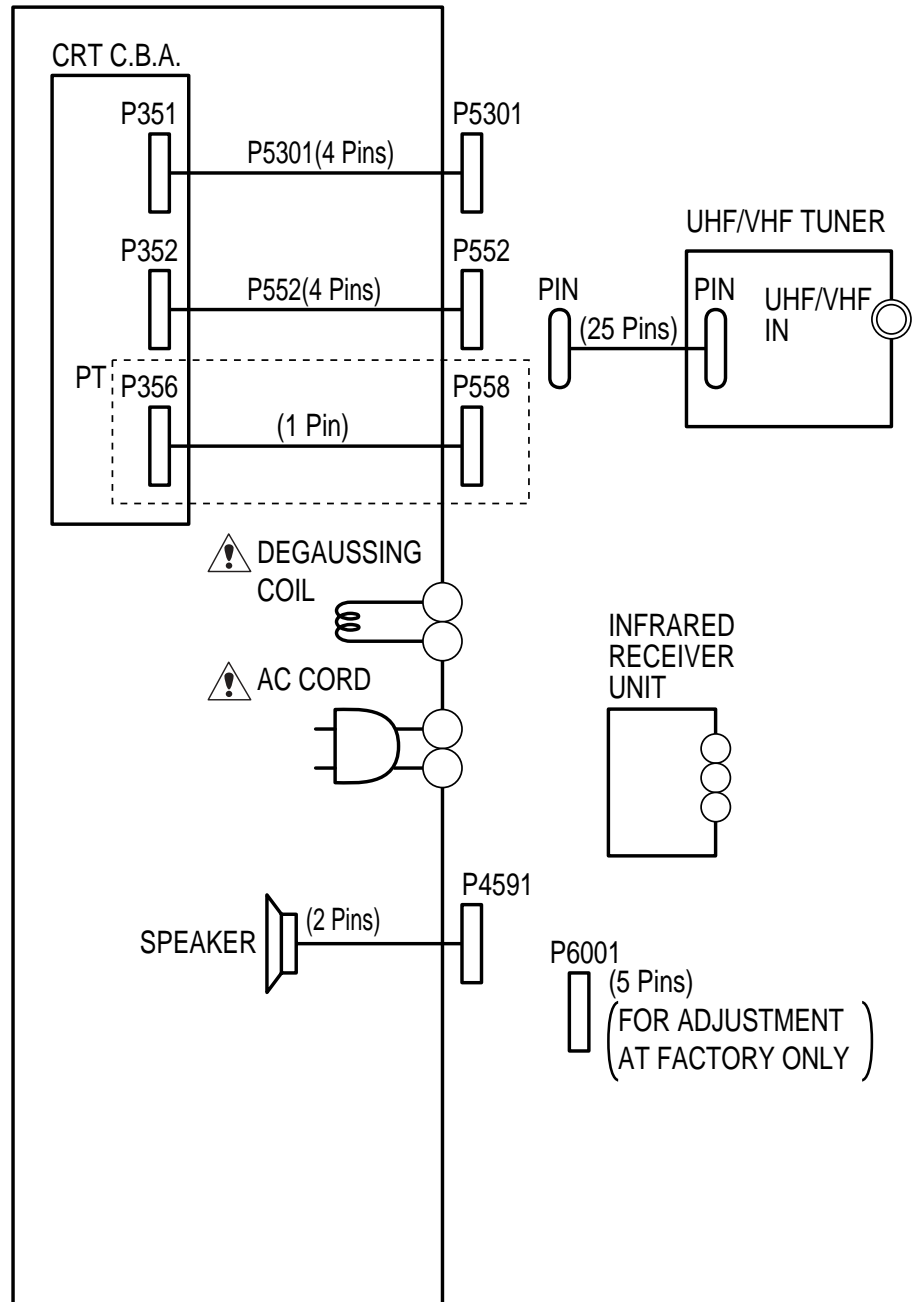


IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H
Not Used	PT

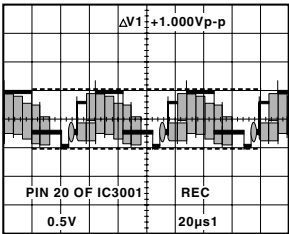


**PVQ-1312W/PV-C1322-K/PV-C1352W-K/PVQ-2012/VV-2002/PV-C2022-K/PVQ-2512/PV-C2542  
INTERCONNECTION SCHEMATIC DIAGRAM**

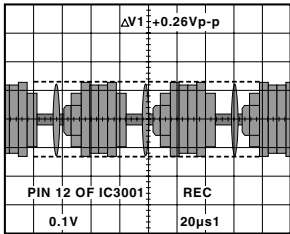


TV/VCR MAIN C.B.A.

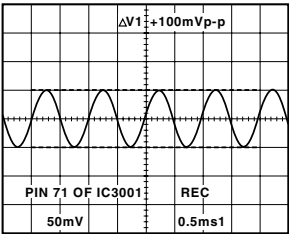
NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.



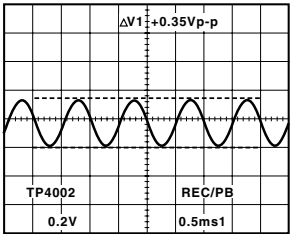
WF1



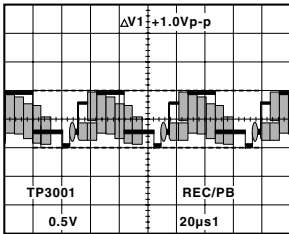
WF6



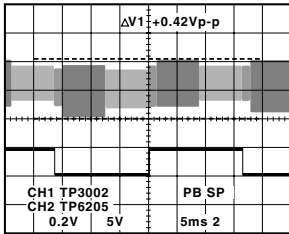
WF9



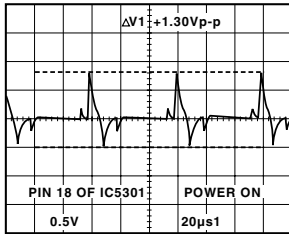
WF14



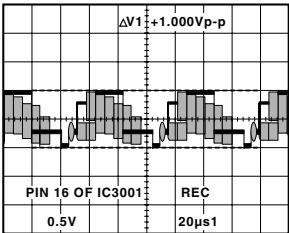
WF18



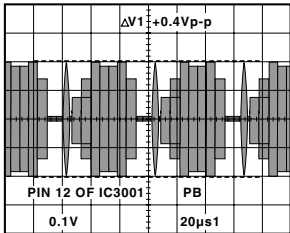
CH1 WF19  
CH2 WF32  
(C,H)



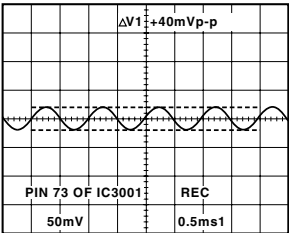
WF23



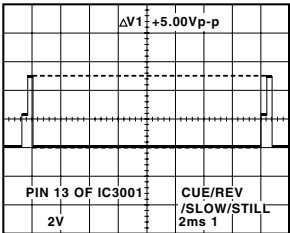
WF2



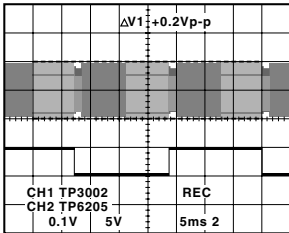
WF6



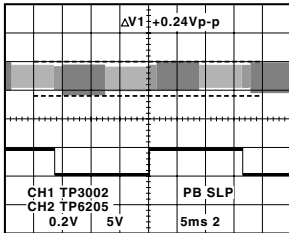
WF10



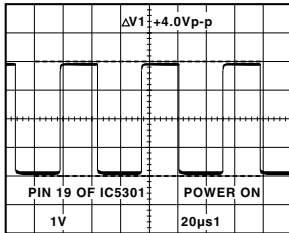
WF15



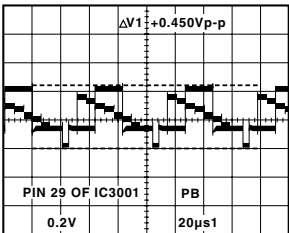
CH1 WF19  
CH2 WF32  
(A,B,D,E,F,G)



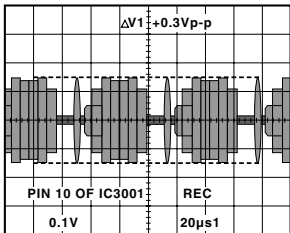
CH1 WF19  
CH2 WF32  
(C,H)



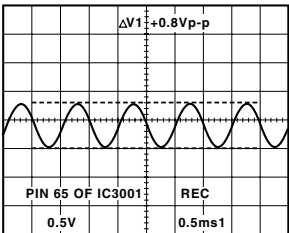
WF24



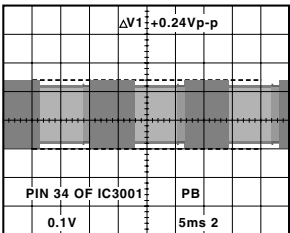
WF3



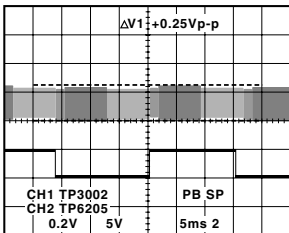
WF7



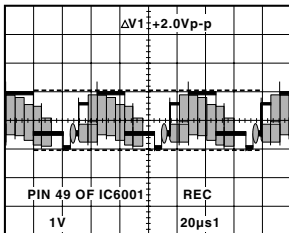
WF11



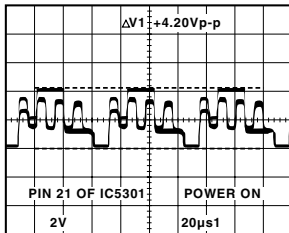
WF16



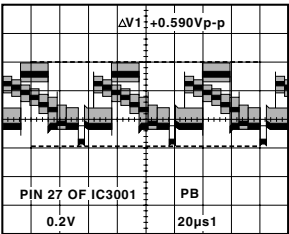
CH1 WF19  
CH2 WF32  
(A,B,D,E,F,G)



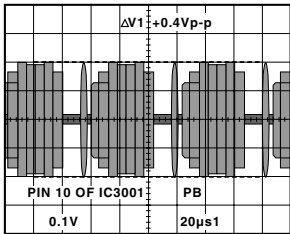
WF20



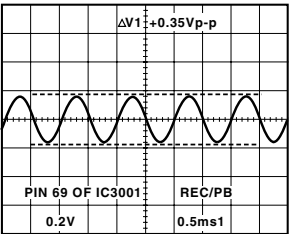
WF25



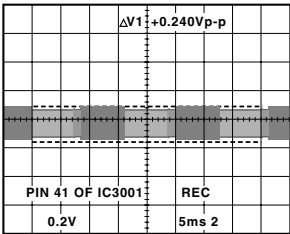
WF4



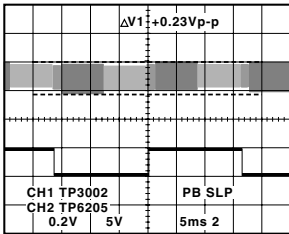
WF7



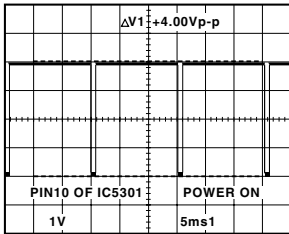
WF12



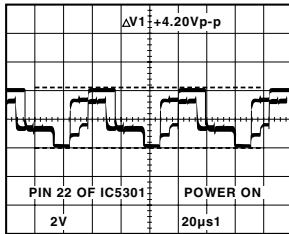
WF17



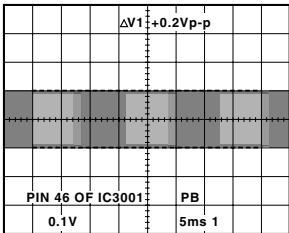
CH1 WF19  
CH2 WF32  
(A,B,D,E,F,G)



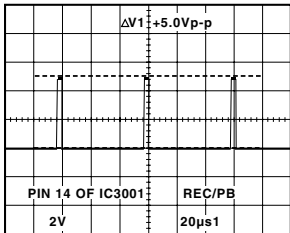
WF21



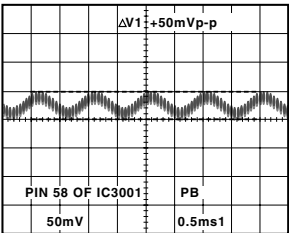
WF26



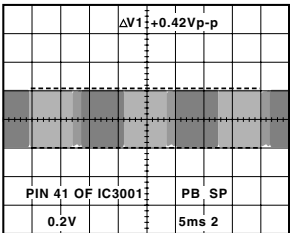
WF5



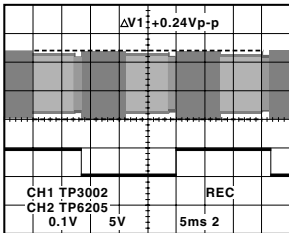
WF8



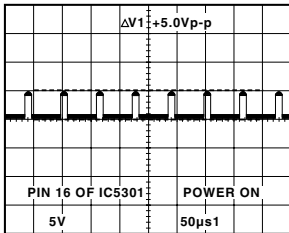
WF13



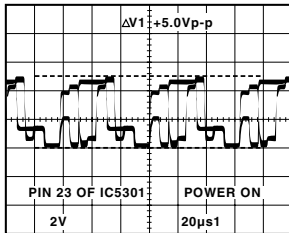
WF17



CH1 WF19  
CH2 WF32  
(C,H)



WF22



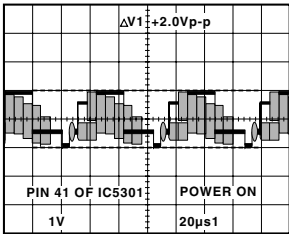
WF27

COMPARISON CHART  
OF MODELS & MARKS

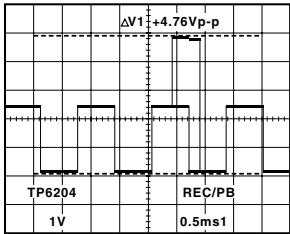
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H



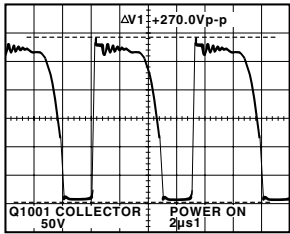
NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.



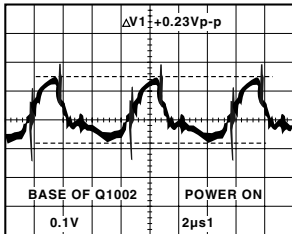
WF28



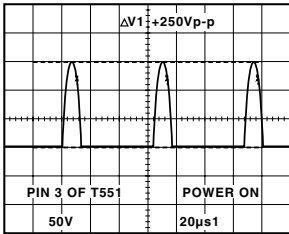
WF31



WF36

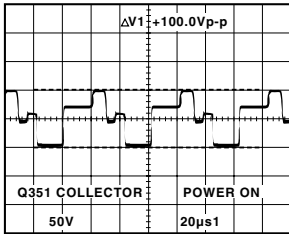


WF41



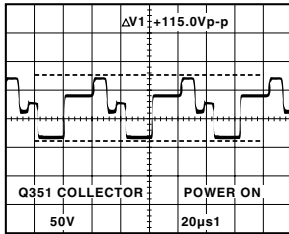
WF46

**CRT C.B.A.  
(A, B, C)**



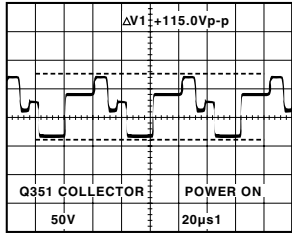
WF60

**CRT C.B.A.  
(D, E, F)**

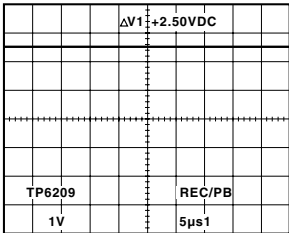


WF60

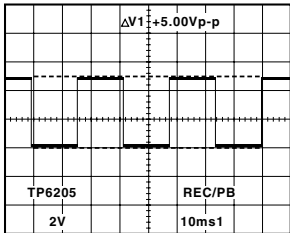
**CRT C.B.A.  
(G, H)**



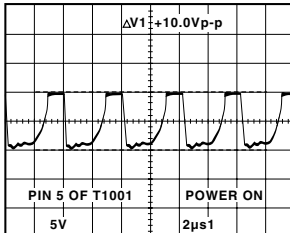
WF60



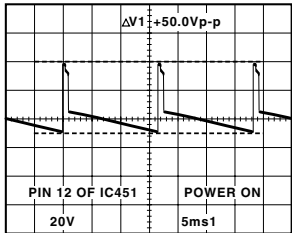
WF29



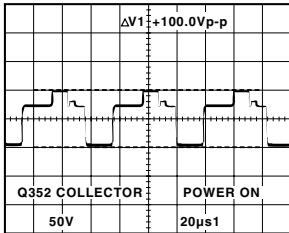
WF32



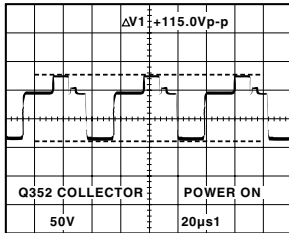
WF37



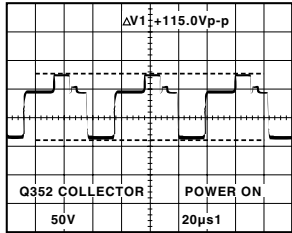
WF42



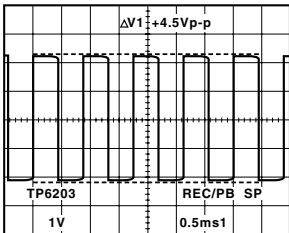
WF61



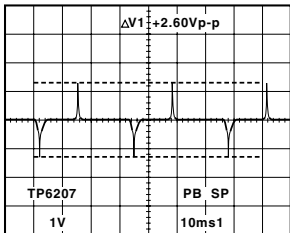
WF61



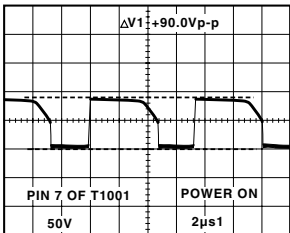
WF61



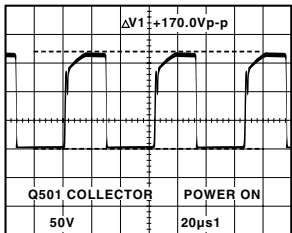
WF30



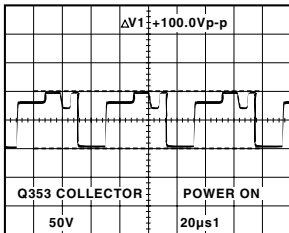
WF33



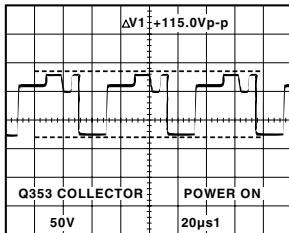
WF38



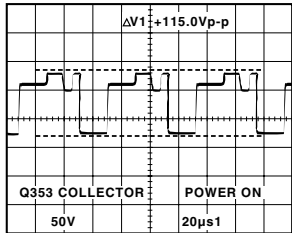
WF43



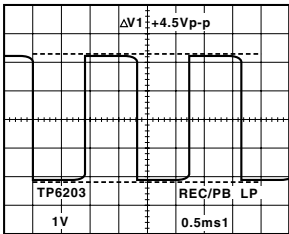
WF62



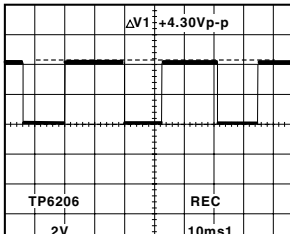
WF62



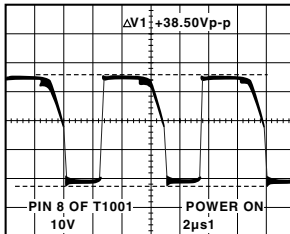
WF62



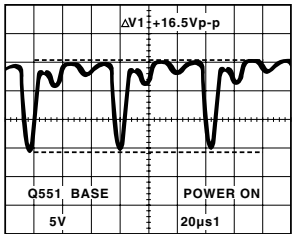
WF30



WF34



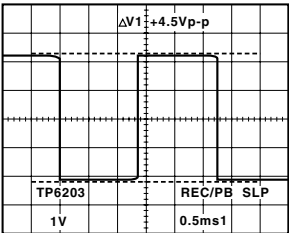
WF39



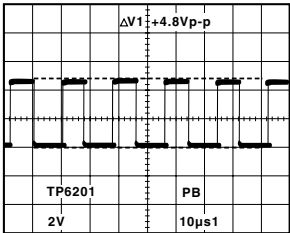
WF44

**COMPARISON CHART  
OF MODELS & MARKS**

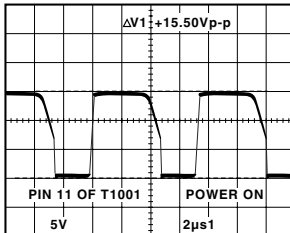
MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H



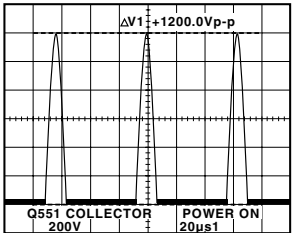
WF30



WF35



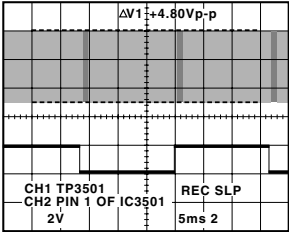
WF40



WF45

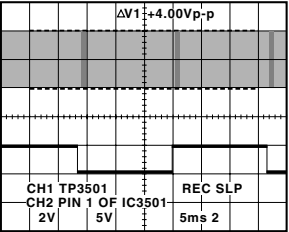


HEAD AMP C.B.A.  
(A, B, D, E, F, G)



CH1 WF70  
CH2 WF71

HEAD AMP C.B.A.  
(C, H)



CH1 WF72  
CH2 WF73

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART  
OF MODELS & MARKS

MODEL	MARK
PVQ-1312W	A
PV-C1322-K	B
PV-C1352W-K	C
PVQ-2012	D
VV-2002	E
PV-C2022-K	F
PVQ-2512	G
PV-C2542	H



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